ENGINEERING NEWS-RECORD

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Here the Hydro-Trencher digs a ditch for a new sewer line. Hydraulic stabilizer blade also acts as a backfiller blade. By simply turning the bucket around you can convert the trencher to a swing loader. Hydraulic trip loading bucket is also available.

This Oliver 88WT Hydro-Trencher is working on a city sewer project—locating a manhole 8-feet deep through a 2½ by 5-foot street opening.

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Topping the Tower—On May 12, just 20 weeks after the first tower section was bolted to the pier, a Bethlehem erection crew closed the upper strut of the Jersey-side tower for the $90,000,000 suspension bridge between Philadelphia and Gloucester City, N. J. Rising 378 ft above the Delaware River, the tower contains over 5000 tons of steel. The main span of the bridge, 2000 ft from tower to tower, will be the eighth longest suspended span yet built. Engineers are Modjeski & Masters-Ammann & Whitney for the Delaware River Port Authority.

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Publisher

August 4, 1955 ENGINEERING NEWS-RECORD Vol. 155, No. 5

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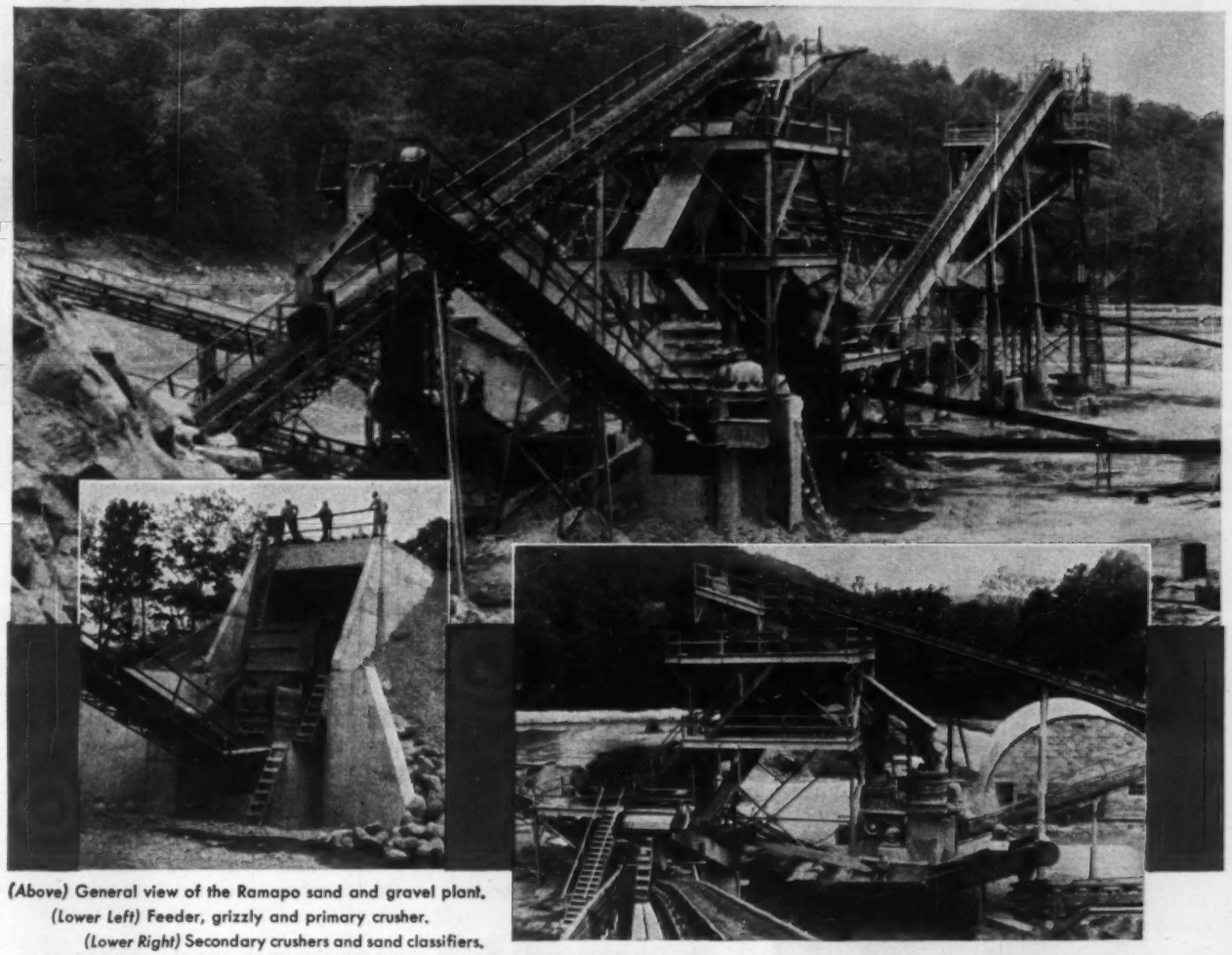

(Above) General view of the Ramapo sand and gravel plant.
(Lower Left) Feeder, grizzly and primary crusher.
(Lower Right) Secondary crushers and sand classifiers.

Near the New York Thruway, and close to many other heavy construction jobs, this complete Telsmith plant meets all their aggregate requirements. Built by Ramapo Sand & Gravel Co., Ramapo, N. Y. and designed by Telsmith engineers, it has Telsmith equipment throughout. It makes three sizes of gravel, and concrete and mason sand, all washed. Be sure that yours is a profitable Telsmith plant. Send for Bulletin 266.

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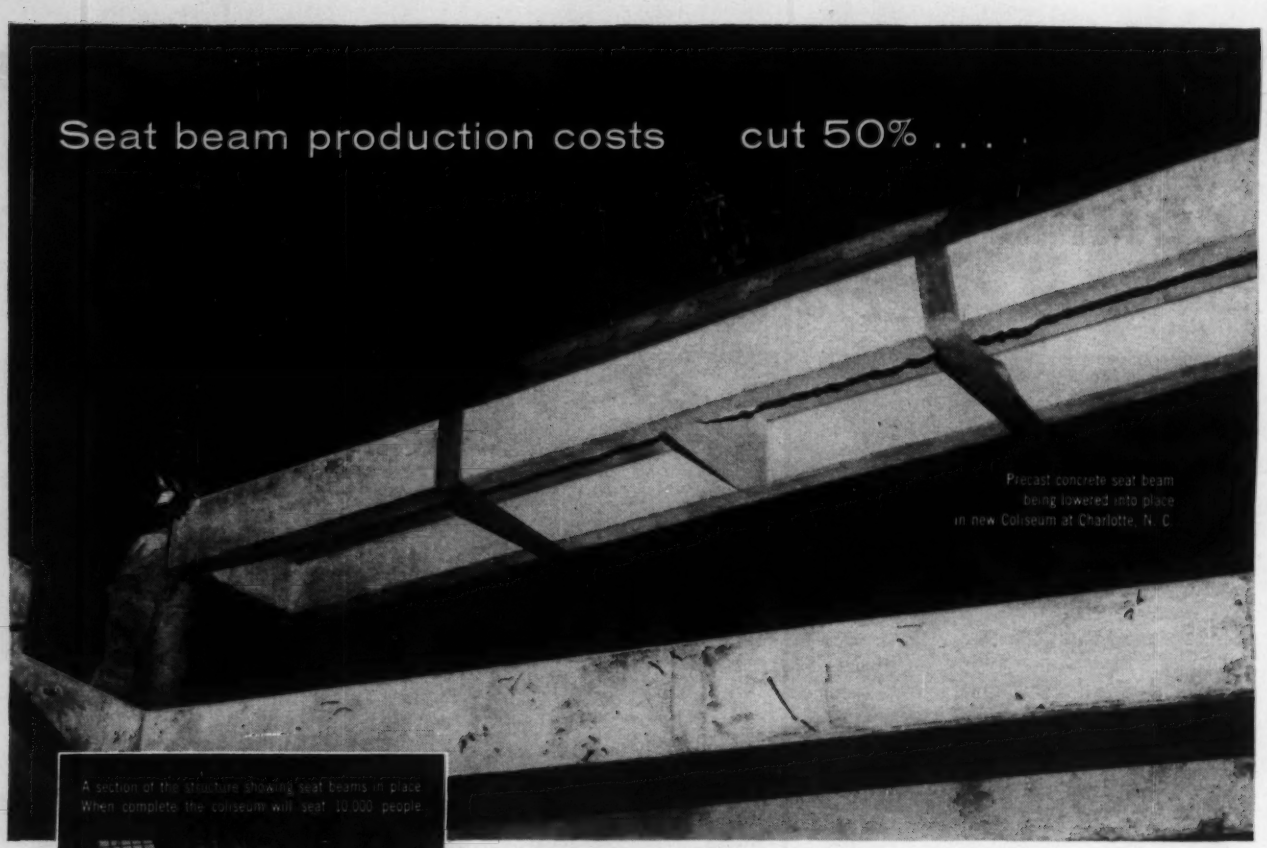

Precast concrete seat beam being lowered into place in new Coliseum at Charlotte, N. C.

A section of the structure showing seat beams in place. When complete the coliseum will seat 10,000 people.

Architect: A. G. ODELL & ASSOCIATES, Charlotte, N. C.
Consulting Engineers: SEVERUD-ELSTAD-KRUEGER, New York City
General Contractor: THOMPSON & STREET CO., Charlotte, N. C.
Contractor for Precast seats: CONCRETE MATERIALS, INC., Charlotte, N. C.

with LEHIGH EARLY STRENGTH CEMENT

The unique design of the new coliseum and auditorium at Charlotte, N. C. called for 1000 precast concrete seat beams, each weighing 4000 pounds.

Using Lehigh Early Strength Cement and mass production methods to cast the beams, Concrete Materials, Inc. were able to strip and re-use forms within 24 hours. The beams were ready for placing in 72 hours, *less than half the time* that would have been required with regular concrete.

This fast production schedule, made possible by the use of Lehigh Early Strength Cement, cut labor, curing, form and general overhead costs by 50%.

Whatever your cement requirements, there are Lehigh Cements to fit them. And remember, somewhere on nearly every job, Lehigh Early Strength Cement will save time and money.

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PORTLAND CEMENT CO. *Allentown, Pa.*

B.F.Goodrich

All-Nylon tires recapped again and again, cut costs one-half, contractor reports

S. J. GROVES AND SONS CO., builds roads all over North and South America. Equipment used by this Minneapolis, Minn., contractor includes tractor graders and scrapers, oil and sprinkler trucks, low-boys and trailers, dump trucks and compactors.

To keep tire costs at a minimum, this company uses B. F. Goodrich *all-nylon* tires. On the Indiana Turnpike, the project engineer reports: an average life of over 4,000 hours, sometimes as many as 5 recaps. No wonder Groves finds B. F. Goodrich tires cut costs one-half!

Nylon can lower your tire costs, too

Nylon is stronger than ordinary cord materials. It withstands double the impact, resists heat blowouts and flex breaks. That's why the B. F. Goodrich *all-nylon* tire body outwears even its extra-thick tread, *can be recapped again and again!* You get more original hours of service, more hours of service per recap. You save money on tires!

B. F. Goodrich makes a complete line of *all-nylon* tires for every off-the-road job. See your B. F. Goodrich retailer today and find out how you can cut tire costs to a minimum. His address is listed under Tires in the Yellow Pages of your phone book. Or write *The B. F. Goodrich Co., Tire & Equipment Division, Akron 18, Ohio.*

THESE RECAPPED B. F. Goodrich *all-nylon* Rock Logger tires (rear) work 20 hours a day, 6 days a week the year 'round.

S. J. GROVES uses 7 kinds of B. F. Goodrich tires on the Indiana Turnpike project, including the Super Traction tires shown above.

Specify B. F. Goodrich tires when ordering new equipment

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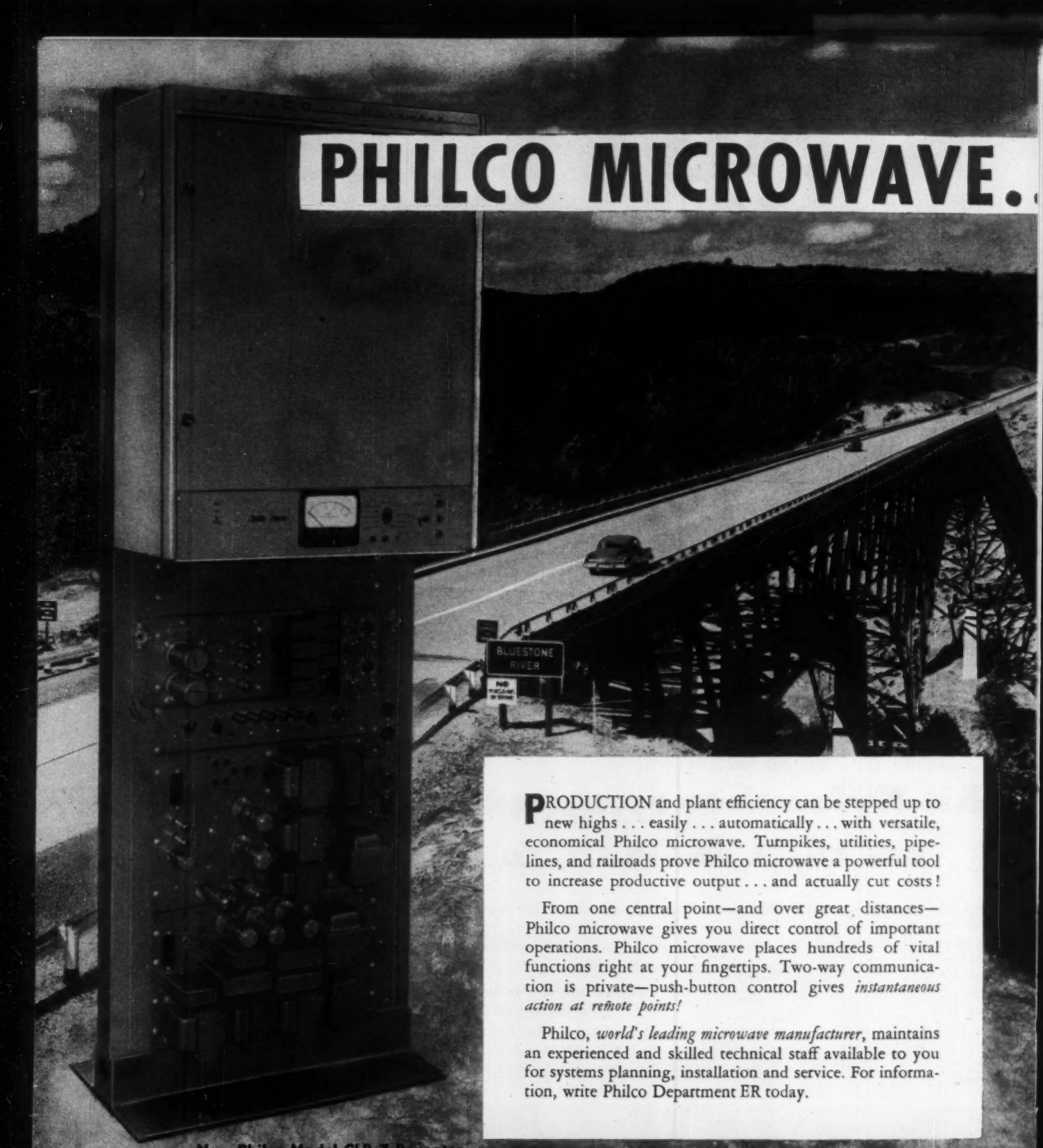
PHILCO MICROWAVE..



New Philco Model CLR-7 Repeater

PRODUCTION and plant efficiency can be stepped up to new highs . . . easily . . . automatically . . . with versatile, economical Philco microwave. Turnpikes, utilities, pipelines, and railroads prove Philco microwave a powerful tool to increase productive output . . . and actually cut costs!

From one central point—and over great distances—Philco microwave gives you direct control of important operations. Philco microwave places hundreds of vital functions right at your fingertips. Two-way communication is private—push-button control gives *instantaneous action at remote points!*

Philco, *world's leading microwave manufacturer*, maintains an experienced and skilled technical staff available to you for systems planning, installation and service. For information, write Philco Department ER today.

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by Centralizing Plant Control!

TURNPIKES use Philco microwave for traffic control. Over rough terrain, fully automatic Philco microwave systems provide a reliable, low-cost means of communication to meet emergencies, keep highways clear of possible blocks . . . maintain contact with radio-equipped cars and trucks . . . 'round the clock.

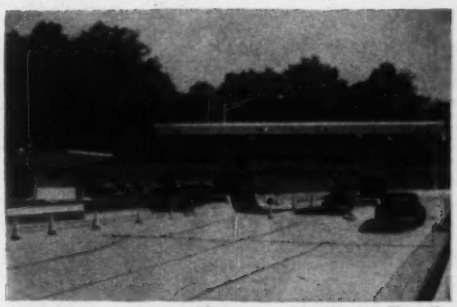

Photo courtesy West Virginia Turnpike

PIPELINES use Philco microwave for automatic operation. At this control center, pressures and flow rates of oil, operation of pumps, compressors and telegraphic printers, throughout this 1000-mile pipeline, are monitored and automatically controlled. Duplex voice communication is provided from one location to another.

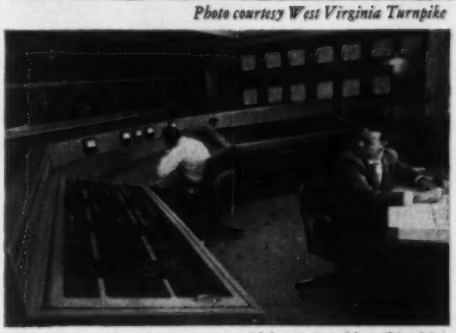

Photo courtesy Platte Pipe Line

RAILROADS prove Philco microwave dependable. Philco microwave has proved to be a reliable and dependable means of communication, even during floods and storms when vulnerable wire lines have failed. Voice communication, telegraph and teletype are transmitted instantly to remote stations along the route.

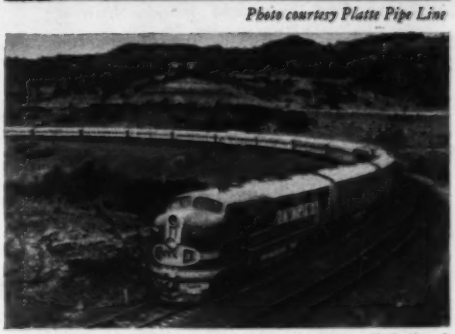

Photo courtesy Santa Fe Railroad

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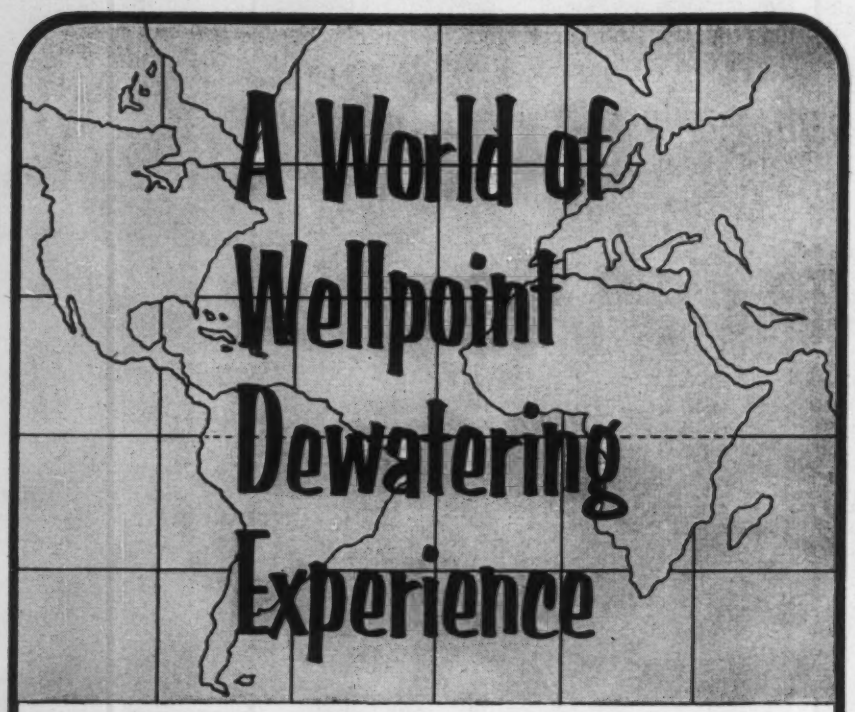

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READER COMMENT

How to Ease Cement Shortage

SIR: With regard to the present and forthcoming cement shortage (ENR June 9, p. 24) I believe that a more publicized and widespread use of pozzolans, wherever possible, as a partial replacement for cement would greatly alleviate the situation. In spite of the mass of data on pozzolans and pozzolanic materials in the technical journals, many engineers and contractors are still not aware of its benefits and potentialities.

Pozzolans may be substituted for as much as 50% of the cement in concrete. A more common figure, perhaps, would be in the range between 25% to 30%, such as would be used in highway and airport paving, certain hydraulic structures and dam work. Using the 25% figure as an argument, this would have the effect of increasing the monthly production capacity of the cement industry by 5,000,000 bbl, based on production figures as given in the ENR article for the first quarter of 1955. It is certainly something to think about.

In addition, in many cases, a better and more economical concrete would result. All those in a position to conserve the use of cement should read the excellent basic primer on pozzolans by Prof. R. E. Davis of the University of California in ENR April 5, 1951, p. 37.

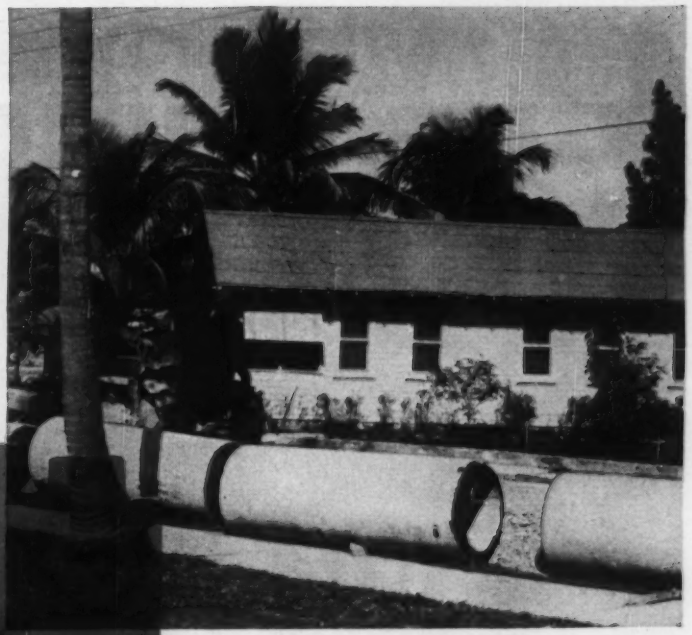
R. G. LEE
Asst. Civil Engineer
San Francisco Water Dept.
San Francisco, Calif.

Better Soils Testing

SIR: I read with interest the editorial (ENR July 14, 1955, p. 120) on Professor Burmister's proposed methods for testing soils. Burmister's scientific approach to soils engineering dates back at least twenty years and articles by him on the subject have been in print for the past ten years, and are not new to ASTM. His approach to testing is certainly straight forward. He suggests only that the testing procedure be adjusted wherever possible to fit the conditions imposed by climate, location, and soil characteristics, as well as those factors imposed by the structure itself. This recommendation is certainly not "radical."

I am sure it can be agreed that no two foundation problems are alike in the same manner that it is agreed that no two bridges are exactly alike. Therefore how can one establish single test procedures to test for all foundation

Look for TYLOX Rubber PIPE COUPLINGS



Where infiltration problems are "tough!"

In Miami

ENGINEERS AND CITY OFFICIALS DEFEAT FLORIDA'S SUBAQUEOUS SOILS WITH TYLOX JOINTS TO KEEP "OUTSIDE WATER OUT" OF NEW CITY SEWERS

Miami's choice of TYLOX Rubber Joints for new sewerage lines not only solved infiltration problems presented by high water tables, but sped completion of the project, kept construction costs down and assured long-lasting *leakproof* lines. Here's how . . .

MORE PIPE DOWN PER DAY, with *fast-working* TYLOX to offset slow working conditions. TYLOX Joints are safely made in wet trenches, and backfilling can follow *immediately.*

NO JOINT FAILURES — Rubber TYLOX seals under *compression* . . . angularities in the line — or stresses from shifting soils or surface loads — are compensated by the natural resilience of the rubber.

NO CORROSION — Made of specially compounded rubber, TYLOX Joints are immune to sewerage and industrial waste acids and alkalies. *TYLOX outlasts the pipe itself.*

Write for complete details and more case histories on TYLOX, the *one* pipe joint that meets requirements of engineers, sanitary officials and construction men alike. Read the *facts* for yourself, and specify TYLOX to prevent infiltration, speed construction and lower [illegible] on *your* next concrete or vitrified clay pipe project.

PROJECT: *City of Miami — Sewerage Expansion*

PIPE: *Reinforced Concrete — Manufactured by United States Concrete Pipe Co., Cleveland, O.*

ENGINEERS: *For the City of Miami:*
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W. T. Eefting, Project Engineer, Design & Specifications
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READER COMMENT

conditions? Unfortunately a strong movement has been fostered over the past few years to treat soils testing as a technician's operation rather than a professional engineering service.

It is argued that the man testing the soil need not have an understanding of the foundation problem and therefore a simple routine should be established to give uniform answers (apparently few are concerned as to the possibility that in many cases the answers are uniformally incorrect).

You state as a disadvantage that "it may make necessary the employment of soils 'experts' to select the 'appropriate' modification of the test method, even for small projects," and that the "cost of making tests would be increased." If the project is so routine and small that foundation consultation is not required, why waste money on tests that are never used, especially when they may be performed by people incapable of making a decision as to the test procedure. As far as cost is concerned, I wonder just how much money would be saved by industry and government agencies if a fewer number of more expensive tests, conducted by engineers, were substituted for the multitude of so called economical standard routine tests that serve little more than to mislead the structural designers and fill filing cabinets.

It is indeed time that more people like Professor Burmister take a definite stand to raise soil mechanics to a professional division of civil engineering with less consideration for technical uniformity and more consideration for economical and engineered foundation design for the client.

JAMES J. O'DEA
Goodkind & O'Dea
Consulting Engineers
Hamden, Conn.

CALENDAR

Pennsylvania Sewage and Industrial Wastes Association, annual conference, Pennsylvania State College, Aug. 22-24.

American Society of Civil Engineers, hydraulics division, University of California, Berkeley, Calif., Aug. 24-26.

International Association for Hydraulic Research, 6th Plenary meeting, Delft, Netherlands, Aug. 29-Sept. 2.

New York Section, American Water Works Association, annual fall meeting, Saranac Inn, Saranac Inn, N. Y., Sept. 8-9.

Western Association of State Highway Officials, annual conference, Jackson Lake Lodge, Wyo., Sept. 8-10.

New England Water Works Association, Lake Placid Club, Lake Placid, N. Y., Sept. 18-22.

International Road Congress, Dolmabahce and Yildiz Palaces, Istanbul, Turkey, Sept. 26-Oct. 16.

American Public Works Association, congress and equipment show, Milwaukee, Wis., Oct. 2-5.

Federation of Sewage and Industrial Wastes Associations, Ambassador Hotel, Atlantic City, N. J., Oct. 10-13.

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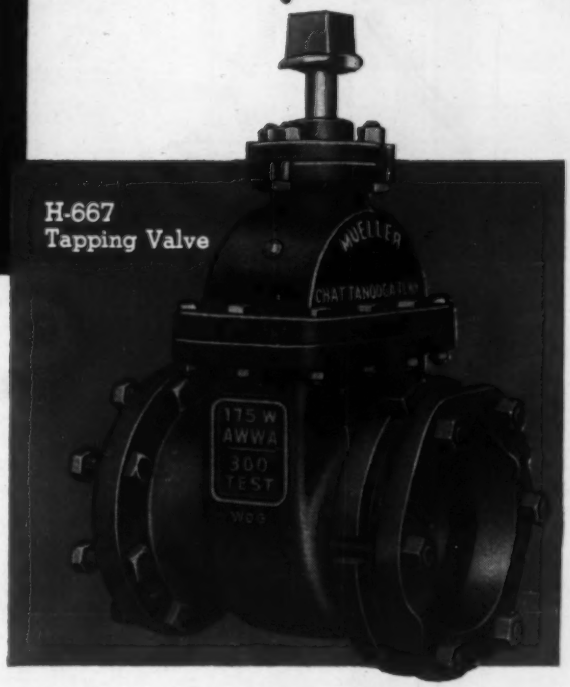

H-667
Tapping Valve

Mueller Tapping Sleeves and Valves are the most practical—and economical—means of connecting lateral or branch mains. Connections are made and lateral is put in service under pressure with a Mueller "CC" or "C-1" Drilling Machine —no shutdown, no loss of water, no interruption of flow in main!

Heavy duty construction and extra length of mechanical joint tapping sleeve assures maximum rigidity and strength. One mechanical joint sleeve of a nominal size will fit all classes of cast iron pipe regularly used by using only two sets of gaskets. Main sizes from 4″ through 12″ with various combinations of outlet sizes 2″ through 12″ are available.

Special mechanical joint tapping valve has oversize waterway—allows full-size cut for maximum flow. Exclusive four-point disc wedging mechanism assures tight shutoff and trouble-free operation. Available with "O" rings or conventional packing in sizes 2″ through 12″.

Tapping Crosses, Split Repair Sleeves and Cut In Sleeves and Valves are also available with mechanical joints.

Calked type tapping sleeves are available which will fit all classes of pipe for mains 3″ through 36″ with various combinations of outlets 2″ through 16″. Calked type tapping valves are available with "O" ring or conventional packing or flanged type for post indicator, with conventional packing only—sizes 2″ through 16″.

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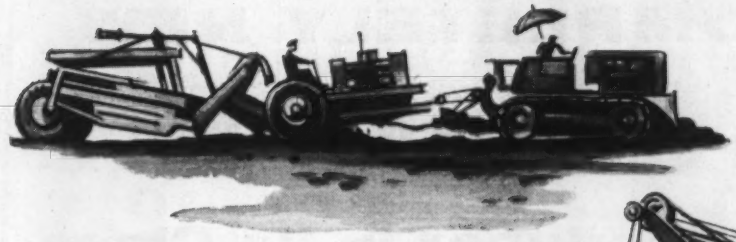

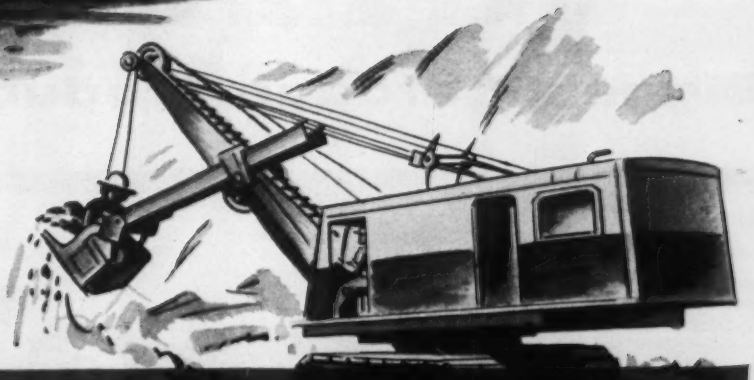

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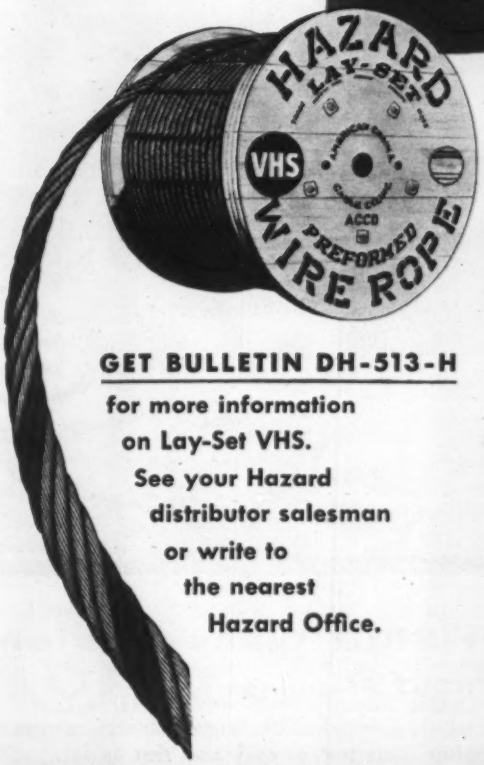

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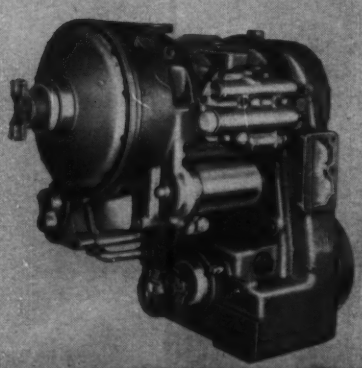

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More Horsepower per bucket capacity than other standard models. Either gasoline or diesel power available.

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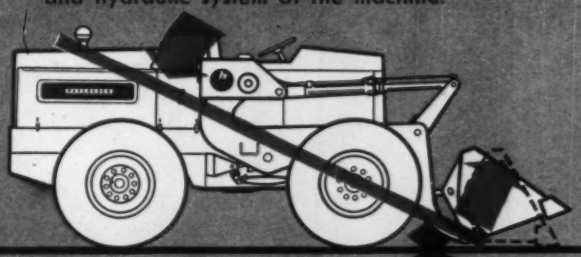

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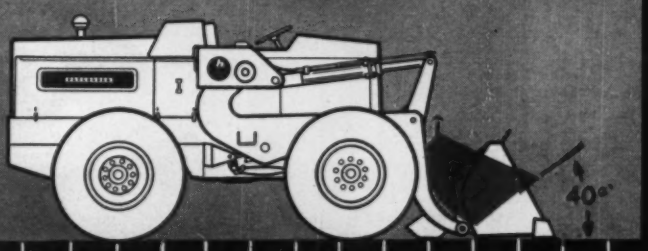

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

PUBLIC RELATIONS LEVY—Plasterers and their employes in Santa Clara County, Calif., will contribute 1½ cents per hour for a public relations campaign designed to show the advantages of plaster over alternate materials. Contributions from the AFL local and county plastering contractors group are expected to swell the campaign's fund by up to $30,000.

CITY LICENSE TAX PROTESTED—Three engineers employed by a Jacksonville, Fla., engineering firm have challenged the city's right to charge them a municipal occupation license tax.

In protest letters to the city, the State Engineer Examining Board and the Florida Society of Professional Engineers, the three dissenters contend that by billing them ($15) as individual salaried engineers the city is "signaling out a specialized employed group upon whom to levy this charge."

The city attorney, however, has ruled that it is immaterial whether an engineer is employed by another, works on commission or practices on his own account. He noted that for years engineers and architects employed by Jacksonville firms have paid the license tax, which is also levied on lawyers, doctors and other professional persons.

A FAMILIAR FRUSTRATION—Netting only 15 recruits after interviewing 180 civil engineering graduates at 20 southern colleges, the Louisana Highway Department still has at least 60 job openings for young engineers going begging.

Highway Engineer E. J. James, discussing the problem at a recent State Highway Board meeting, noted that Louisiana's new starting salary of $375 a month for engineers was "right at the top among highway departments in the South." But, he hastened to point out, what the state can offer as advancement paywise falls way short of industry's offers.

It was also noted that this year's civil engineering graduates from all colleges in the state numbered only 38—about half the number the Highway Department itself was looking for.

SIGN OF THE TIMES—Shopping center entrepreneurs don't miss a trick these days. A condemned poor house located between the communities of Chatham and Ghent in New York State will be converted into a shopping center instead of being torn down. The garden plots, once used to help sustain the institution, will become parking areas.

MORE THAN WILLING—The Richmond-Petersburg Turnpike Authority is getting a trustee for its funds for nothing—$2. Four banks in Richmond and one in Norfolk bid for the trusteeship. All asked the normal fee except for the State-Planters Bank & Trust Co., of Richmond. This bank offered to serve without fee and presented a $2 check in favor of the commission.

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— Faced with the problem of achieving 28-day concrete strengths of *3750-psi-plus-15%* with lightweight concrete in Texas summer heat, the engineers designed a mix using ½ lb. Plastiment Concrete Densifier per bag of cement, and enough Sika AER to provide 5½ to 6% of entrained air.

This mix design was the result of previous successful experience of Texas Industries, manufacturer of the Haydite aggregate.

Plastiment's retarding action not only kept the mix workable for placing with minimum water/cement ratio, but — because Plastiment-concrete gains strength faster than ordinary concrete after initial set — concrete reached the required 28-day strength *in just 7 days,* with additional properties of higher density, bond to steel, uniformity, and reduction in rate of heat development during hydration.

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WASHINGTON OBSERVER

A lot of important construction legislation is going over until next year. The adjournment rush forced delay on some major programs—highways, school construction, public works. They all will be affected by the politics of the 1956 campaign year.

Maintaining prosperity will be the chief aim of the Administration, as well as good government, and good politics. So a lot of the programs held over from this session will be vigorously pushed in 1956.

This means a high level of construction activity can be anticipated. The Upper Colorado River storage project, and its cousins—Frying Pan-Arkansas, Hell's Canyon and so on—will get more bipartisan support. The $220-million Trinity River project in California squeaked through this time.

One more year of school integration following the Supreme Court's recent edict will have had its effect—the debate by then will be less volatile. So some federal aid to school construction will stand a chance.

Housing is going to remain high. Some officials are beginning to worry that the interminable fight over public housing—which tied up new housing legislation in the closing days of Congress—threatens to injure the government's support program (see page 23). Year after year it is the "tail that wags the dog" and the fear is that the dispute eventually will have its effect on general housing policy.

But the Administration is still optimistic—for this year. The President's advisers do not expect the weekend announcement of tighter credit rules to have a big effect on starts.

•

Building will go over the $1.2-million mark this year. The feeling in Washington is that the 2% increase in down payments, and the reduction of mortgages from 30 to 25 years will reduce starts by no more than 100,000. Only the "extreme fringe" of buyers who depend on easy credit will be frightened off.

A sharper pinch could come next spring. That is when the Federal Reserve Board policy of gradually increasing interest rates will begin to be felt in the housing field. But the tightening of mortgages is being handled carefully and delicately. To be sure, the government is allowing general credit to tighten, and in housing, the first direct effort was in the area of shifting closing costs to borrowers. That was a reminder, and a warning—the Administration will expand and contract as they see housing's influence on the general inflation-deflation equation.

•

The governments credit policy is taking hold on public works, too. Higher long-term financing rates have not discouraged municipal and state borrowing for big projects to a big degree yet. But a gradual tightening, balanced with Eisenhower's policy of building for a growing population, should be expected, and watched carefully in making long-term plans.

The hold-up of new public work starts will be a factor. Congress voted money for millions of dollars of new engineer and reclamation projects which Eisenhower had not sought in his budget. The way they are cleared for construction will reflect the Administration's feeling about what should be done now, what should be left for more slack times.

•

A new Great Lakes Waterway deepening is moving ahead. The proposal is to spend $110 million to deepen to 25.5 ft the connecting channels in the St. Mary's River, the Straits of Mackinac, Lake St. Clair, and St. Clair River and the Detroit River. The Corps of Engineers would do the job. It's part of the whole complex of the St. Lawrence Seaway.

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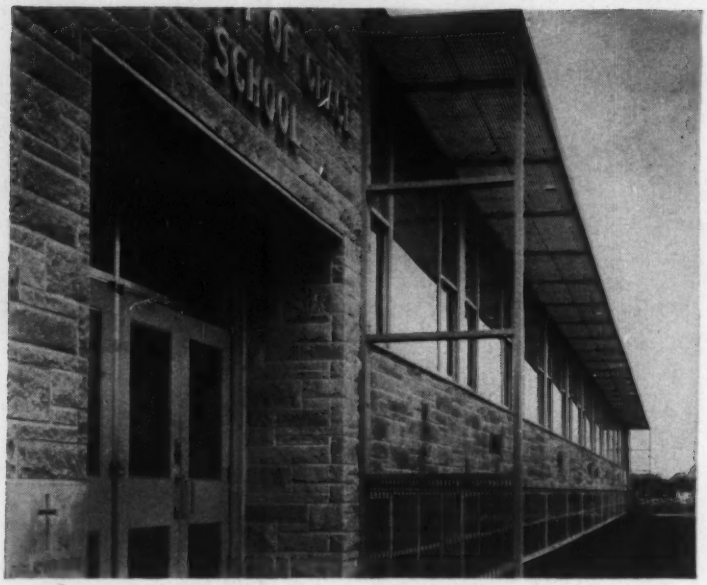
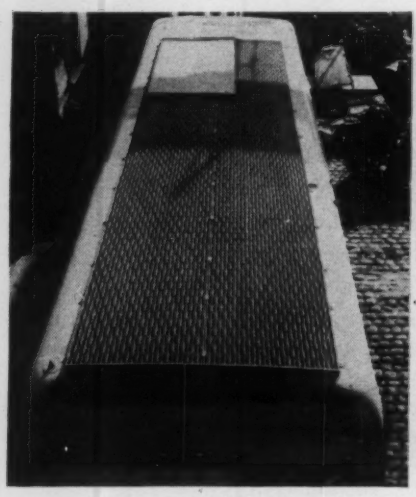
NEW USES OF GRATING . . . WHERE ONLY BORDEN QUALITY WOULD DO . . .

Here on this page are a few of the many new uses for grating being pioneered every day. Each is an exacting job where only standards of quality equal to BORDEN'S will do.

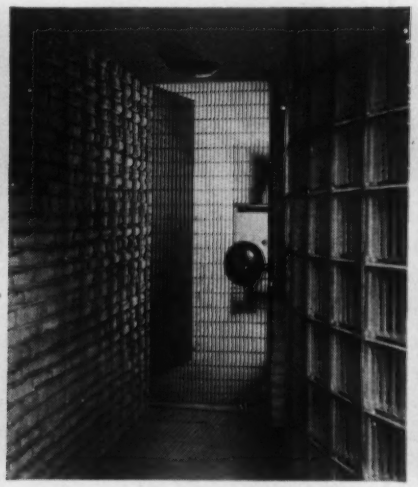
And remember . . . BORDEN manufactures every type grating in ferrous and non-ferrous metals.



Light aluminum grating for SUN SHADES on buildings is in perfect harmony with modern design—allows 80% passage of light and air without the accompanying penetrating rays of the sun.



Wherever this Color Television truck goes, whatever the assignment of the reporters who must mount its roof, BORDEN riveted *serra-crimp* grating will mean surerfooting —even in ice or snow.



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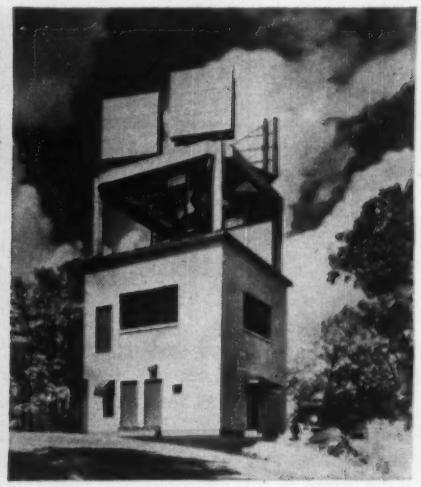

Television relay stations and radar stations that gird our continent have adopted grating as standard outside platform material. It will not collect snow as most other platforms will.

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Highway Bills Die in Congress but . . .

Pressure for Big Road Program Will Mount

The Grand Plan for Highways came full circle this week.

It started a year ago at Bolton Landing, N. Y., where the annual Governors Conference heard Vice President Nixon outline the Eisenhower Administration's dream of a national system of first rate highways.

It boiled up in Congress this year and then fell flat when all atempts to agree on a method of financing failed to withstand political and emotional pressures.

Now, with action put off until 1956, the question bounces back, for the next round, to the governors once more. Highways will be the foremost topic at their 1955 annual conference, convening at Chicago in mid-August.

Actually, it was easy for the first session of the 84th Congress to procrastinate. The current $875-million highway program does not expire until next year.

Still it did look for a while as if Congress would abandon the historic biennial system of legislating for highways and give the states a long-range program. But Democrats, for fiscal and political reasons, refused to buy the Eisenhower "Grand Plan" which took final form in the program worked out by retired Gen. Lucius D. Clay (see table next page). Clay and the Administration wanted to pay for highways by government-backed bonds.

Democrats succeeded in killing the Clay plan, and then through the Fallon and Gore plans (see table) came up with their own countermeasures. The Fallon plan—based on higher user taxes—had the best chance, but it was thwarted by a powerful combination: disagreement among the Democrats themselves over the unpleasant prospect of raising taxes, Republican refusal to help them after the GOP plan went down, and a smoothly functioning trucker-rubber-oil lobby.

The question is: If Congress won't approve the bonding plan and it won't raise taxes, what will it accept?

Looking to 1956

One thing is certain: The second session of the current Congress, which convenes next January, will have to pass some new highway legislation.

By custom, Congress has enacted in even-number years legislative authorizations for the subsequent two years. Thus, the Highway Act of 1954 is now running out. In a matter of days, $875 million of apportionments to the states for fiscal 1957—the 12 months beginning next July 1—will be announced. This is the second and last installment of apportionments under the 1954 act.

Before any new program can be planned by the Bureau of Public Roads hereafter, it has to have new Congressional authorization.

The question is: What kind of authorization will Congress give?

Obviously, no one knows the answer. But as tempers began subsiding in Washington this week, a lot of people thought they knew. The trouble is, their answers don't jibe.

• **The pessimists**—Chairman George H. Fallon (D.-Md.) of the House Public Works Subcommittee on Roads feels the likelihood of getting a long-range, major federal highway program is slim.

Fallon speaks for a substantial bloc of expert opinion around the capital. The same members of Congress will be back. This goes for committees—where the blueprints for action are laboriously sweated out—as well as in

Gen. Lucius D. Clay: His committee worked out the Administration's plan—charting the biggest public works program in history.

Sen. Albert Gore: He got in early in the game with a Democratic counter-proposal—large-scale extension of present federal aid.

Rep. George H. Fallon: His House committee drafted another big plan—and the controversial taxes to pay for it.

The Three Plans Congress Rejected . . .

	Fallon	Gore	Clay
TERM	13 yr	5 yr	10 yr
FEDERAL MONEY			
(1) Interstate System	$24 billion	$7.5 billion	$25 billion
(2) Regular federal-aid program (primary, secondary and urban)	$11.3 billion	$4.5 billion	$6 billion
STATE MONEY (for federal-aid roads)	$12.7 billion	$6 billion	$6 billion
ESTIMATED TOTAL PROGRAM (including federal and state contributions)	$48 billion	$18 billion	$101 billion
MATCHING FORMULA			
(1) Regular federal-aid program	50-50	50-50	50-50
(2) Interstate system	90-10	90-10	93-7
FEDERAL FINANCING METHOD	Raise gasoline, diesel fuel, truck tire taxes.	No provision	Issue bonds for $20 billion thru new government corporation; get remainder from existing gas and oil taxes
ADVANCES			
(1) Regular federal-aid program	10% of funds available could be used, up to 5 yrs in advance of construction, for right-of-way purchase.	No provision	No provision
(2) Interstate system	Same as above. Also, Commerce Dept. could advance $500 million in fiscal 1956 for construction.	$100 million authorized for right-of-way purchase in 1956, to be charged against state apportionment.	No provision
APPORTIONMENT FORMULA			
(1) Regular federal-aid program	⅓ population, ⅓ area, and ⅓ RFD mileage	Same	Same
(2) Interstate system	Ratio of state's cost in relation to estimated total cost of system in all states	½ on population alone; ½ on combination of area, population and RFD mileage.	Same as Fallon bill

the Senate and House chambers, where the votes are finally counted.

The "Fallon school" reasons that, "If they wouldn't vote for taxes to pay for highways this year, how can they be expected to in 1956, an election year?"

As a consequence, they hold that what you can expect is another two-year program, pretty much like that of the 1954 act, except bigger—perhaps $1 billion or more, as against $875 million.

• **The optimists**—There is another, more optimistic school which holds high hope for getting major, long-term legislation onto Eisenhower's desk by next spring. Rep. George A. Dondero (R.-Mich.), a Fallon subcommittee member who led the unsuccessful fight for the Clay plan, typifies this school, which reasons like this:

"The need for more and better highways is so urgent that the public will insist on plans for getting them. A compromise plan—one that both Democrats and Republicans can take—will be worked out."

This group puts its stakes on legislation that would pay for the program by merging principal features of the Democratic and Republican plans of 1955—raise taxes on gasoline, diesel, fuel, truck tires, etc. (but less than the Fallon bill proposed) and then round out the financing by federally backed bonds (in lesser amounts than had been visualized in the Clay program).

Trucking interests, which, justly or unjustly, are being largely blamed for torpedoing the Fallon bill, are quietly working with highway exponents of both parties on a possible compromise along the lines mentioned above.

The Administration, which has all but officially buried the Clay plan, is ready to lend its support to such a move.

• **The probable outcome**—All things taken into account, two good bets:

1. "Public education" to take advantage of rising emotionalism about the need for better highways will be stepped up in the months ahead.

2. A long-range compromise program, built around the Clay and Fallon programs, will be adopted in 1956.

1955's Stalemate

The Eisenhower Administration has done a master salesman's job on getting across to the nation the demand for a first-class highway system.

There's no longer any serious argument, even in Congress, about the principle. Look at the Senate Public Works Committee report of May 13: "On the basis of the overwhelming evidence before it, the committee concluded that the national requirement . . . is no longer subject to serious question."

Or the House report of July 21: "The witnesses . . . stressed the importance of authorizing the whole (long-term) program now in order to avoid the possibility of inefficient and expensive build-ups and let-downs. . . . The committee concurs in this reasoning."

Yet, 1955 produced no program. Why? The answers are numerous and controversial.

The Senate gave the Clay plan no serious consideration. Conservative and influential Sen. Harry F. Byrd of Virginia punched the bond issuance plan full of deadly holes at the outset. Interest costs ($11 billion) would be exorbitant, Byrd said, and besides, the plan tried to play games with the national debt—make it look lower than it actually is by issuing highway bonds outside the debt limit.

• **Partisan politics also figured**—Dispassionate appraisals recognize too, that partisan politics figured in the Senate's end result—adoption of a "Democratic highway program" as embodied in the Gore bill. It amounted (see table) to mere extension, and fattening-up dollarwise, of existing highway law.

But, as late as last week, it looked like a real, honest-to-goodness, long-range highway program would sail

through—not the Clay plan, to be sure, but another "Democratic bill", i.e. the House's Fallon plan. Like the Clay plan it set high goals and, more important, was acceptable to the Administration.

It can't be proved, but apparently the Fallon bill would have been acceptable to the Senate, too. But the roof fell in on the House Democrats. Lobbyists swarmed over Capitol Hill. Tremendous pressure was exerted on the congressmen.

The trucking industry, which faced the heaviest new imposts through higher diesel and tire taxes, was in the forefront. However, both Congressional and White House sources agree "there was a lot of oil and rubber in the lobby, too."

• **Lobbyists go all out**—The National Association of Independent Tire Dealers, in a Washington bulletin printed for its members around the country, reported 24 hours before the vote that "it has already spent up to $5,000 in this tax battle" and "it may take another $10,000 to finish the job."

Rep. Tom Steed (D-Okla.), a big man on the Fallon subcommittee, saw the bill dying and tried to save it. But Steed made his move too late to patch the measure again in committee. Then the House Rules Committee, insisting on precedent, cleared the Fallon bill for final action under a rule that required the tax-raising section to be voted up or down, with no chance at amendment.

What Steed wanted was to lower the truck tire tax increases a little and raise the same amount of money, or slightly more, by shifting some of the burden over to be borne by automobile size tires.

Taken in time, Steed's move might have saved the Fallon bill. At least, trucker lobbyists would have eased up. But there is another side to this coin: The potent American Automobile Assn., which was cheering for the Fallon bill, let it be known that it "vigorously opposes any further shifting of the tax load to the passenger car which is already carrying more than its fair share of highway costs."

The curtain came down on the floor in an amazing sequence. Republicans, behind Dondero and Republican leader Joseph M. Martin, Jr., pushed the Clay plan forward as a substitute for the Fallon bill. They showed surprising strength before losing, 178 to 184. Then a plan carrying no financing provision was defeated.

That cleared the way for the biggest surprise of all. The Fallon bill went down dismally, 123 to 292, with only 94 Democrats and 29 Republicans for it, while 128 Democrats and 64 Republicans opposed it.

Housing Bill

Measure concerned mainly with extending expiring provisions of present law

After the usual wrangle over public housing, Congress voted a housing program that extended expiring titles but that did little to broaden or change the current program.

The Senate had voted to authorize 570,000 public housing units, not more than 135,000 to be started in any one year. The House turned down a committee bill calling for 35,000 units a year—the figure President Eisenhower had asked—and substituted the Wolcott bill which extended a few key titles but authorizes no public housing starts.

The Senate-House conferees met in the closing hours of the session (as we go to press) knowing they probably would wind up at a figure of around 35,000 units a year. Earlier, Congress had approved a supplemental appropriation bill that provided money for 35,000 units next year. Appropriation action is always a more certain guide to what will be done than authorization action. No more units than Congress provides money for can be built, regardless of the number authorized.

In addition to public housing, which is a relatively small part of the overall bill, the housing bill provides for the following:

FHA mortgage insurance—Authorized $3.4 billion to augment the $600 million of unused authorization to provide for the operation of the FHA mortgage insurance program for another year. This was the heart of the bill and without funds to continue the government guarantee of housing mortgages the construction industry would be seriously threatened.

Home repair loans—Extended for one year the FHA guarantee of home improvement loans. The present law set a $2,500 ceiling on loan guarantees, the Senate version sought to raise this to $3,000.

Slum clearance and urban renewal—Increased the capitalization by $200 million a year for two years and with authority for the President to increase it by another $100 million at any time during the period.

College housing—Increased from $300 million to $500 million the total obligation which can be outstanding at any one time.

Military housing—Extended for three years, until June 30, 1958, the Wherry housing mortgage insurance program and also made adjustments upward in mortgage ceilings.

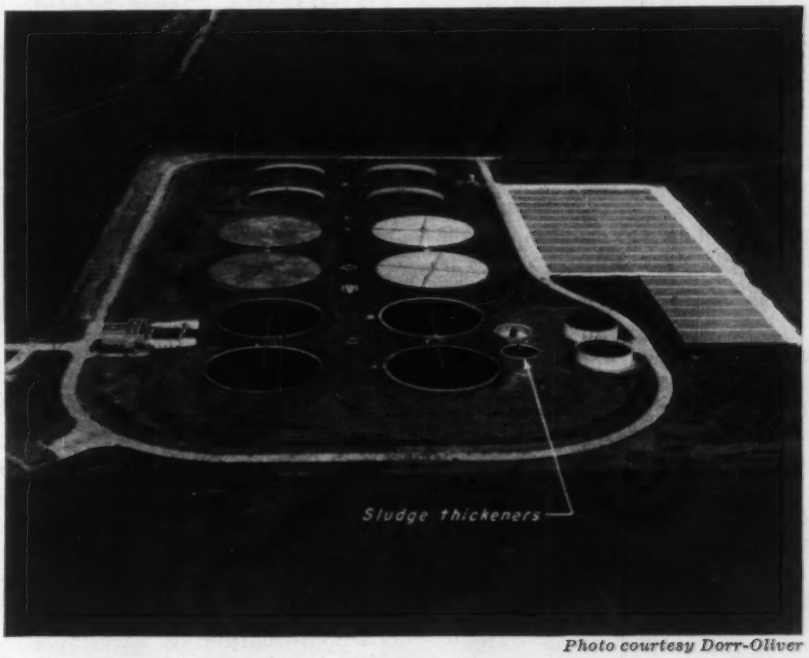


Photo courtesy Dorr-Oliver

Low-Cost Biofiltration Plant Goes to Work

The recently completed 30 mgd Beaumont, Tex., treatment plant built at a cost of $12 per capita—$80,000 per mgd—is now in operation (ENR Apr. 29, 1954, p. 41). Two 50-ft dia sludge thickeners, producing a minimum of 7½% dry solids, will reduce sludge digester capacities to an estimated 45% of conventional type plants. The Beaumont plant, largest biofiltration plant in the Southwest, is the first to use this method of sludge thickening since its development by New York City Public Works Department engineers for the Bowery Bay Plant.

Michigan Calls First Bids On $11-Million Expressway

The Michigan State Highway Department called for bids this week on the first project—a bridge—on the $11-million Brighton-Farmington Expressway.

The bridge will carry 12-mile and Beck Roads over the expressway two miles north of Novi and a short distance north of the present U.S. 16. It will consist of four, rolled beam spans totaling 253 ft in length, with a 48-ft roadway and 3-ft wide sidewalks on each side of the span. Traffic will be able to enter or leave the expressway at this point.

When completed, the Brighton-Farmington Expressway will start at U.S. 23, just east of Brighton, and extend 21.5 mi to a connection with the present divided highway on U.S. 16 east of Farmington near middle Belt Road, replacing U.S. 16 between these two points.

The Highway Department hopes to have the biggest part of the work under contract by the end of the year, as well as 15 bridge and grade separation projects.

GSA Submits Four More Lease-Purchase Projects

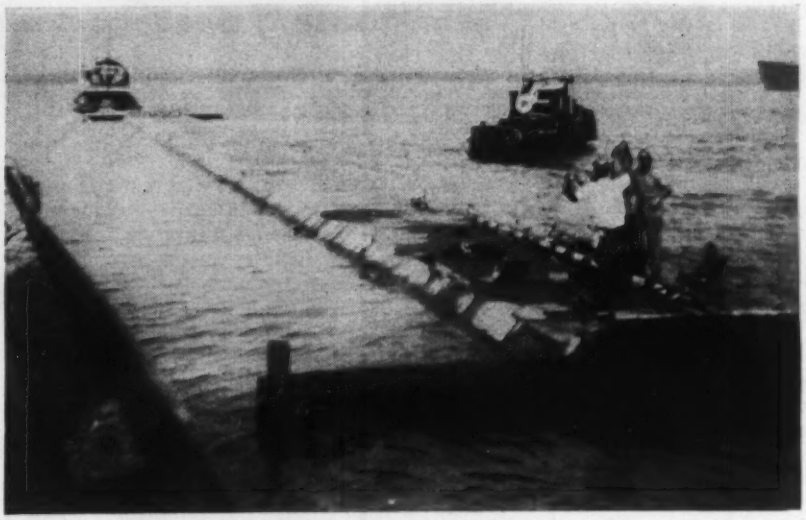
General Services Administration last week submitted for Congressional approval four proposed lease-purchase projects with a total estimated cost of more than $31 million.

Biggest project is a seven-story post office building at New Orleans, to cost $14.2 million. Others are a new civil service building in Washington, D. C., $9.8 million; a five-story courthouse-federal building in Minneapolis, $5.8 million; and a two-story post office at Burlington, Iowa, which is estimated at $1.3 million.

Senate and House Public Works Committees must approve the projects. Then GSA will retain architects and invite private firms to bid on financing and construction of the buildings.

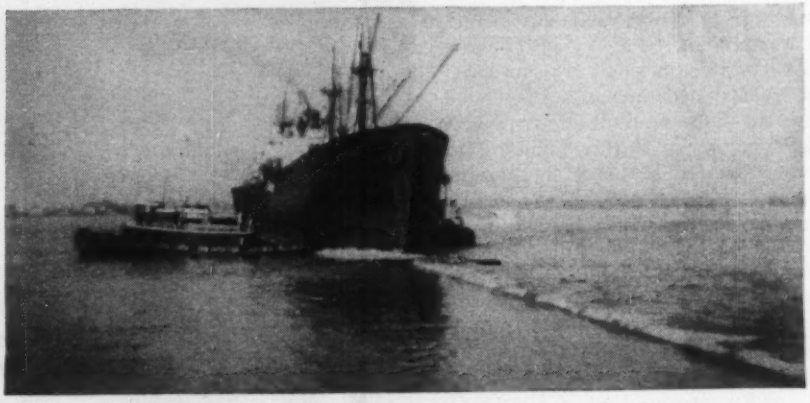
$70-Million Housing Project Planned Near San Francisco

McKeon Construction Co. has announced plans for a $70-million residential development on a 375-acre tract two miles south of the San Francisco County line, in an unincorporated portion of San Mateo County, Calif. The firm plans 4,000 homes in the $15,000 price bracket, as well as a $20 million shopping center. Several office buildings may be incorporated into the project later.



Tunnel Section, Under Tow . . .

Freighter, Also Under Tow . . .



Find Hampton Roads Not Big Enough

Heading for its final resting place at the bottom of Hampton Roads, near Norfolk, Va., the first 300-ft section of a new vehicular tunnel met a ship head-on in an unusual—but fortunately not serious—construction accident.

With part of its outside concrete sheathing already in place and some of the interior concreting also done, the 37 ft dia tube showed only 15 in. of freeboard when it started its journey of three miles to position over an underwater trench.

As the tugs hauled the clumsy section out into the stream another tug (center photo) began to swing a Dutch coal freighter in a wide circle, to bring the ship into a nearby coal loading pier.

And, coming almost as if aimed, the high-riding freighter sent tugs scurrying for cover as it hit the tunnel section's forward bulkhead almost directly in the center. Since neither tunnel nor ship had much momentum, damage was slight, and the tube section was placed without any further incident.

The Coast Guard is investigating the crash.

Many States Raise Highway User Levies

Gas tax increases by 14 legislatures calculated to yield $187 million annually; 15 out of 19 mileage tax bills lose

As a result of action by this year's sessions of state legislatures a sizable percentage of highway users can look forward to better roads–and increased taxes.

A survey by The National Highway Users Conference shows that bills calling for boosts in gasoline taxes were passed in 14 states. This additional source of revenue is expected to yield some $187 million annually, with most of it scheduled to be used for highway improvement.

In addition to increasing gas tax rates, a number of states have raised levies on other motor vehicle fuels, revised registration fees and authorized special taxes.

Here is a break-down of how new legislation will effect highway users.

Alabama–The gas tax rate was increased from 6¢ to 7¢.

Arizona–The basic registration fee was increased from $3.50 to $4.

Arkansas–A mileage tax bill was defeated.

Colorado–More changes were made in tax rates that already had gone into effect the first of this year. The mileage tax rate has become .8 mills per vehicle ton-mile, plus 2 mills per cargo ton-mile. And it now applies to vehicles weighing over 4,500 lb instead of those weighing over 8,500 lb. However, such vehicles now pay a $17.50 annual registration fee instead of one based on a schedule graduated to $589.

Connecticut–The gas tax was increased from 4¢ to 6¢. The mileage tax bill was defeated. The passenger car registration fee was changed from a range of $7-$11 to a flat fee of $8.

Delaware–A mileage tax bill was defeated.

Georgia–The gas tax was increased from 6¢ to 6½¢. Passenger car fees were changed from a weight basis to a flat fee of $5 and a slight increase was provided for smaller private trucks and smaller semi-trailers. Registration fees for common and contract carrier trucks and trailers were increased approximately 10¢ for those up to 5 tons rated capacity.

Idaho–New registration fees and a mileage tax were enacted and will become effective next year. Passenger car fees were increased, with a new top fee of $17.50. Special attention was given to taxation of commercial vehicles over 16,000 lb gross weight and to non-commercial vehicles over 24,000 lb.

Illinois–A mileage tax bill was defeated.

Indiana–A mileage tax bill was defeated.

Iowa–The gas tax was increased from 5¢ to 6¢. Tax rates on other motor vehicle fuels were increased from 5¢ to 7¢. A mileage tax bill was defeated.

Kansas–The special fuel rate was increased from 5¢ to 7¢, but the same gas tax rate was retained. The ton-mile tax was repealed and registration fee schedule revised for busses, trucks and tractor-trucks. Gross weight is now the basis for computing fees that range from $7.50 for vehicles under 4,000 lb to $825 for those over 60,000 lb. Trailers and semi-trailers are licensed separately at $20 each.

Maine–The gas tax was raised from 6¢ to 7¢.

Maryland–Higher registration fees for passenger cars and commercial vehicles were postponed for one year.

Michigan–The gas tax was raised from 4½¢ to 6¢. The liquified petroleum gas rate was increased, but not the diesel rate. A mileage tax bill was defeated.

Minnesota–Fees for intercity buses were reduced. Fees for other classes of vehicles were raised by approximately 5%.

Montana–The gas tax was raised from 6¢ to 7¢. Tax rates on other motor vehicle fuels were increased from 6¢ to 9¢. A mileage tax bill was defeated. Truck and trailer fees were increased. A new method for registering 3-unit combinations was enacted and non-resident commercial operator single-trip fees were amended.

Nebraska–A mileage tax bill was defeated.

Nevada–The gas tax was raised from 5½¢ to 6¢. Fees for vehicles registered on a flat fee basis were increased by 50¢ and those on a per hundred weight basis by 5¢.

New Jersey–New flat annual fees were provided for passenger cars (instead of horsepower).

New Mexico–The ton-mile tax was repealed in favor of higher truck and bus registration fees.

New York–The gas tax was raised from 4¢ to 6¢.

North Dakota–The gas tax was raised from 5¢ to 6¢. Mileage tax bill was defeated. Fees for all classes of vehicles were increased by approximately 5%.

Oklahoma–A mileage tax bill was defeated.

Pennsylvania–A mileage tax bill was introduced but not acted upon.

South Dakota–A system of truck-tractor registration was provided to facilitate interchangeability of trailers.

Tennessee–A mileage tax bill was defeated. Registration fees for all classes of vehicles were increased by substantial amounts. The 3% gross receipts tax was repealed, the bus inspection fee was reduced, and pro-rata registration of interstate bus fleets was authorized.

Texas–The gas tax was raised from 4¢ to 5¢: Tax rates on other motor vehicle fuels were raised from 6¢ to 6½¢. Motor bus fees were reduced. A mileage tax bill was defeated.

Utah–The basis for computing commercial vehicle fees was changed to a gross weight basis.

Vermont–The gas tax was raised from 5¢ to 5½¢. A fee of $1.15 per hundred weight was provided for trucks that exceed 40,000 lb gross.

West Virginia–The gas tax was raised from 5¢ to 6¢. A mileage tax bill was defeated.

Wisconsin–The gas tax was raised from 4¢ to 6¢. A mileage tax bill was introduced but not acted upon.

Wyoming–A mileage tax bill was defeated.

How States Will Use Gas Tax Increases

State	Tax Increase	New Annual Revenue (Millions of dollars)	Use For Proceeds
Alabama	1¢	$8	Road bond retirement
Connecticut	2	13	Road construction
Georgia	½	5	Road construction
Iowa	1	8.5	Widening primary roads
Maine	1	2.7	Highway improvement
Michigan	1½	30	State & local roads
Montana	1	2.3	Federal-aid matching
Nevada	½	0.6	Federal-aid matching
New York	2	60	Road bond retirement
North Dakota	1	1.7	Secondary roads
Texas	1	30	Schools & roads
Vermont	½	0.57	Secondary roads
West Virginia	1	4.5	Highway improvement
Wisconsin	2	20	State & local roads

Glass-Walled Arena Poses A Problem in Acoustics

When it was dedicated two years ago the $1-million State Fair Arena in Raleigh, N. C., was billed as "The world's most modern big building" (ENR Feb. 5, 1953 p. 31). Today the huge glass and concrete structure is due for some engineering work because of bad acoustics.

The building which has no vertical supports, is supported by two sweeping parabolic arches. Steel cables through the arches support the roof. The design is such that every section is equally distant from the center.

The acoustical trouble resulted from the reflection of sound from the suspended roof and from the glass-walled sides of the arena.

The structure's design made the task of securing expert sound engineering difficult. But the acoustical engineering firm of Bolt, Berank & Newman, Cambridge, Mass., has agreed to attempt a $13,000 improvement of the hearing qualities.

The work will involve applying two types of sound-absorbing materials to the ceiling. A total of 3,200 sound-absorbing glass fiber baffles will be attached, and the engineers will modify the sound amplifying system.

The hard-surfaced glass walls emit a faint echo, now lost in the jumble of reverberation from the ceiling. But engineers believe that this echo may become hardly noticeable after the ceiling and loudspeaker work. The glass walls, however, may still be troublesome for any live sound sources not using the speaker system.

200-Mile Road Widening Project Starts in Florida

A $30-million highway widening project on U. S. 1 will get underway next week in north Florida.

The project calls for turning U. S. 1 into a four-lane highway from Jacksonville to a point near Sebastian, a distance of about 200 mi.

The first work will be on a 15.6-mi section between the northern city limits of St. Augustine and a point just north of the Duval County Line. Contracts for this part of the project already have been awarded to Marion Construction Co., Ocala, Fla., on a bid of $1.2 million.

Work on other stretches of the highway through Flagler, Volusia and Brevard Counties will start in the near future. Last fall these counties —plus St. Johns County—approved bond issues totaling some $17 million. This will be supplemented by federal aid and state road department funds.

Much of U. S. 1 already has been four-lane from Boca Raton south to Miami. A June traffic count on U. S. 1 at Hilliard, northwest of Jacksonville, showed an average of 4,577 vehicles a day, which is a 20% increase over traffic at the same point in June last year.

Florida's heavy traffic gains are illustrated by gasoline tax figures for the fiscal year ending June 20. A record 1,152,271,000 gallons of gas were sold for a total tax of $80.7 million, a $7-million gain over the previous year.

Cement Shortage Delays 5 Road Projects in Iowa

The first effects of the cement shortage in Iowa were felt last week when the State Highway Commission rejected bids on $700,000 worth of construction because contractors cannot obtain cement to fulfill contracts.

Three of the projects involve work on Highway 30. These include widening 14.1 mi from Denison to the Carrol County line, widening 11.6 mi from the city of Carroll west to the Crawford County line, and construction of 1.4 mi of new pavement in Cedar Rapids. The commission has issued a second call for bids on these three projects. Cement is again specified in the hope that it will be available by then.

The other two casualties are both in Linn County, in the eastern part of the state. One calls for 8.3 mi of new concrete paving, the other for .4 mi of paving.

The commission has decided to readvertise for bids on one project—the 8.3-mi stretch in Linn County. For this job it will call for the use of asphaltic concrete instead of cement.

Some spokesmen for the cement industry have criticized the Highway Commission for undertaking such a large widening program without surveying the cement industry. But the commission reports that it had a commitment from the cement industry for more than two months that cement would be available.

Last winter Gov. Leo A. Hoegh initiated plans to widen at least 1,000 mi of Iowa's narrow highways. It is expected that about 600 mi will be widened this year, and the rest in 1956.

50% of Kansas Turnpike Is Now Under Contract

Almost one-half of the 236-mi Kansas Turnpike project is now under contract.

Up to mid-July contracts totaling $48.9 million have been awarded. The new toll road, scheduled for completion in October 1956, will cost an estimated $140 million, and some $100 million of this will go toward construction.

Construction costs up to July have been under estimates by $4.3 million, while right-of-way costs are more than one-third above estimates and are expected to total $8.8 million when completed. Recent contract trends have been above estimates.

Construction figures listed in a survey made by the Kansas Turnpike Authority show that design is 92% completed, a gain of 5% during the past month; construction, 3.3% completed, a gain of 2%; right-of-way available, 163 mi, a gain of 43 mi over mid-June; grading under contract, 234 mi, a gain of 13 mi; grading under construction, 163 mi, a gain of 43 mi; bridges under contract, 235 mi, a gain of 19. Construction has started on 164 bridges, a gain of 48.

While contracts have been awarded for only 17.3 mi of pavement, bids have been received or advertised on 195.2 mi of pavement since the start of this part of the program July 1. This will leave only 40.7 mi of pavement to be up for contract the latter part of this month.

By mid-August, the only pavement not under bids will be two sections near Wichita, four sections east and south of Topeka and three in Kansas City.

The survey shows four bridges yet to be placed in contract for the south section, the 51 mi from Wichita to the Oklahoma border; five still to be contracted for the Emporia-Topeka section of 58 mi, and 12 to be put under contract for the 53-mi Topeka-Kansas City section.

Immediate Start Planned On Cleveland Skyscraper

Plans for immediate construction of a 22-story, $17-million office building in downtown Cleveland, Ohio, were announced last week by the Ostendorf-Morris Co. and the Cleveland Electric Illuminating Co. The utility will be the major tenant in the first major office building to be built in downtown the Cleveland district since 1930.

Exterior perimeter walls will be glass and metal. The building will be completely air-conditioned and will provide lower-level parking facilities. Construction of an adjoining six-story garage is also under consideration at this time.

Architects for the project are Carson & Lundin, of New York, consulting architects for Rockefeller Center. The Cleveland architect engineering firm of McGeorge-Hargett and Associates will design the mechanical features and supervise construction of the new building.

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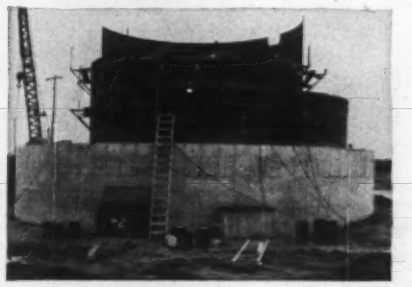

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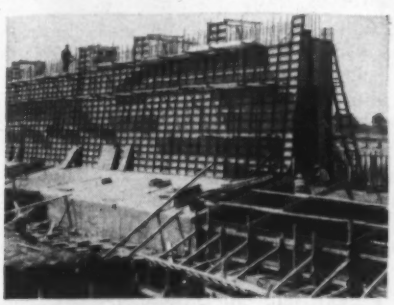

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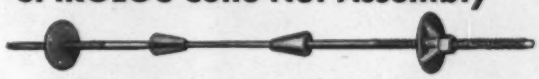

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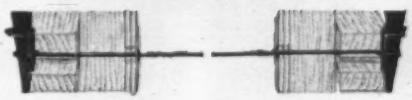

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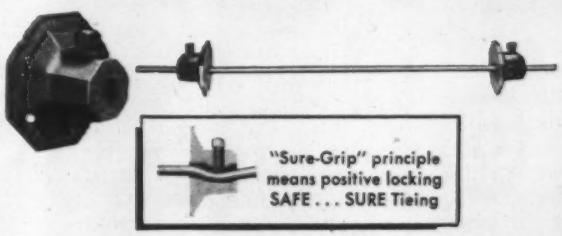

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FLAT-PLATE FLOORS of Statler-Hilton Hotel in Dallas project 10 ft out from outer columns along all sides.

Cantilever Floors Cut Cost of Concrete Hotel

A tough wind-resistance problem had to be solved before savings could be realized with the lightweight-aggregate, flat-plate floors, which support thin, metal-faced walls

Wayman C. Wing
Supervising Engineer
Seelye, Stevenson, Value & Knecht
New York, N. Y.

The 18-story Statler Hilton Hotel nearing completion in Dallas, Texas, will cost less to erect than any of the others built in recent years by the hotel chain; yet it offers proportionately more public areas and service features. Construction cost for the 1,000-room hotel averages $9,350 per room ($1.54 per cu ft). Other new hotels in the chain cost $11,000 per room or more.

A wealth of experience in hotel construction, and especially the lessons learned in building the chain's hotel in Hartford, Conn. (ENR June 10, 1954, p. 31), made it possible for the building designers to effect many little savings, which added up finally to an impressive total. Most noteworthy was the adoption of a reinforced concrete structural system that had not been used previously for buildings of this height. This framing not only saved money but also contributed substantially to the esthetic and functional development of the hotel design.

Other novel features include full-story cantilevered concrete walls; 92-ft girders of composite construction over the main ballroom, with steel girders using the concrete slab above as a top flange; a balcony cantilevering 20 ft over the main lobby; several dramatic hairpin and cantilever stairs; an entrance canopy with cantilever overhangs supported by reinforced concrete torsion members; and a rooftop heliport designed for 6,800-lb. helicopters.

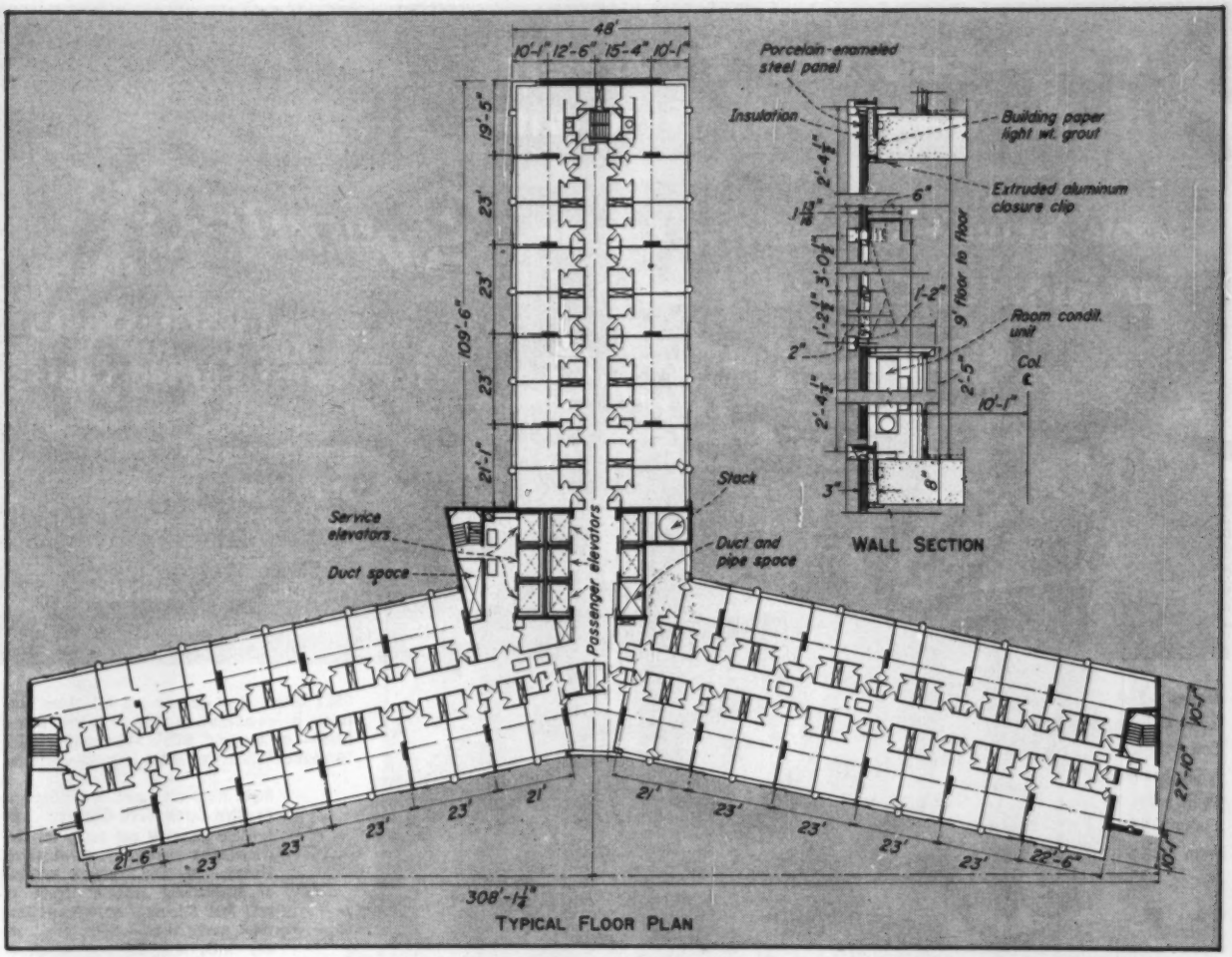
• **Tall and slender**—The hotel is being constructed on a 307x200-ft lot in downtown Dallas. Topped by a three-tier penthouse, it will be 18 stories high (180 ft from the street to the main roof).

In plan, the building is T-shaped. The three wings radiating from a central core are about 156 ft long and 48 ft wide. They are essentially of reinforced concrete flat-plate construction and have sandwich-panel exterior walls faced with porcelain-enameled steel.

• **Cantilever slabs**—The framing system differs from other flat-plate designs used in tall buildings in that there are only two longitudinal rows of columns in each of the long, narrow wings and the floors cantilever 10 ft beyond the column centerlines to support the exterior walls. Structurally, the double-cantilever design is highly efficient, because bending moments at columns and at midspan are nearly equal.

The floor slabs are only 8 in. thick. No drop panels or column capitals are used.

Cost comparisons indicated that this design is more economical than structural steel or reinforced concrete beam-and-slab framing for the floor plan desired by the hotel's architect. Sav-



T-SHAPED BUILDING depends for wind resistance mostly on concrete shear walls at the ends of the wings and in the central core. Thin, insulated sandwich panels with poreclain-enameled steel facing, and without a backup, form the exterior wall.

ings difficult to estimate also resulted from such related effects as reduced building height, which also decreased heating and ventilating requirements, lower partitions, less plastering, shorter piping runs.

To cut costs even more, the structural engineers recommended that the concrete be made with a lightweight aggregate. Selecting an expanded-shale for the aggregate, they took into account in their design the low modulus of elasticity of lightweight concrete by keeping allowable stresses in the concrete low. Floors are also cambered to offset anticipated deflections.

To minimize the effect of shrinkage, each floor was concreted in four pours, the ends of the wings being completed first and the central core last. This sequence allowed most of the shrinkage to occur in the end sections before the central, closure section was placed. All construction joints were keyed and dowelled to resist tensile and shear stresses.

Plastic-coated plywood was specified for floor forms to permit the under side of the floor slab to serve as a ceiling, with only painting required. A wood-float finish was considered satisfactory for the top surface of the slab where wall-to-wall carpeting was contemplated.

• **Shear walls resist wind**—Before the double-cantilever flat-plate design could be adopted, however, the problem of providing adequate resistance to wind forces had to be solved. This turned out to be the toughest task in the structural design, though the basic solution proved to be simple.

In the first place, the wings of the

CONTINUOUS WINDOWS at each level of the 18-story hotel are separated by metal spandrels with flat or shaped facing.

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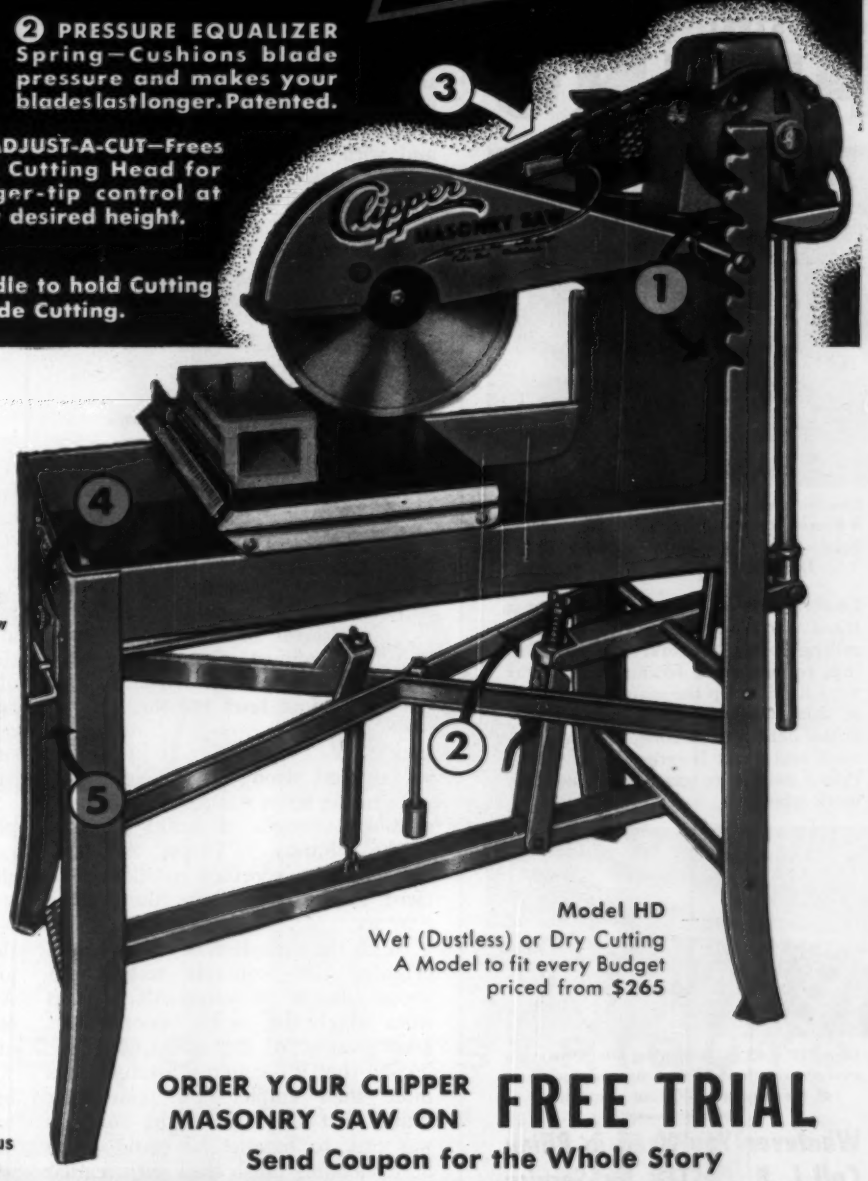

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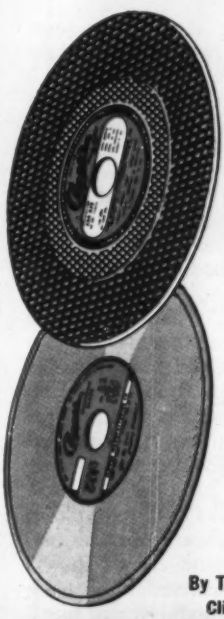

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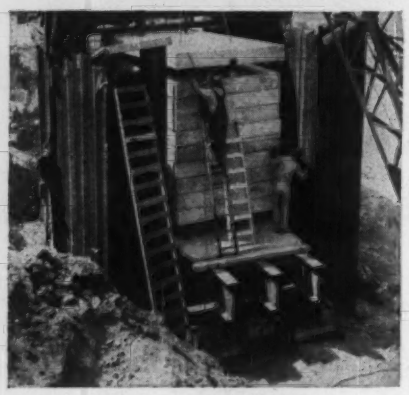

Checking Foundations with 120-Ton Load on H-Bearing Frames Anchored to Foster Piling
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THE DENVER COLORADO PROJECT

Contractors Webb & Knapp got a *Head Start* on this gigantic project by calling Foster for rental steel-sheet Piling, to complete four sumps (that were holding up the major excavation of this 400-foot square foundation). Foster delivered *on time*, the exact sections and exact lengths of steel-sheet Piling needed to get a head start on work schedules.

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building are tall, long and narrow; therefore, relatively flexible. Secondly, each wing has only two rows of columns to resist the lateral forces, and the exterior walls and the floor slabs are too flexible to give much assistance.

The solution was to incorporate shear walls to take the lateral thrust. These vertical cantilevers were placed along the ends of the wings and in the central core.

While the basic idea is simple, the actual design was very difficult because of the complexity of determining the stiffness of the walls. For example, each portion of the concrete wall cluster in the central core reacts differently and with varying stiffness depending on the direction of the wind. The west shear wall is even more complex. It behaves like a cantilever Vierendeel truss, because of the two door openings near the center in each story.

This wall also presented a complicated problem in meeting architectural requirements. More than 10 ft of the building had to be cantilevered beyond the shear wall, and the exterior wall at the end was required to be masonry. Here, the solution was to carry the masonry wall on a stringer along the outer side of a concrete stair slab. This beam, in turn, was supported at one end on a slab band (thickened section of floor slab) cantilevered over the center of the shear wall and at the other end, on a 6-in.-thick concrete wall projecting from the shear wall. The 6-in. wall was designed as a bracket, with tensile and compressive stresses taken out at the floor lines and shear at the main wall.

• **Light but strong**—Lightweight concrete in the floors was required to have a 28-day strength of 3,000 psi, that in the columns, 3,750 psi. A retarding agent was specified to allow sufficient time for finishing during the summer.

With the exception of a few erratic cylinders, the concrete tested well above design requirements. Areas from which the erratic concrete was taken were cored, and subsequent tests proved that the concrete strength was more than ample. The contractor found that the lightweight concrete was easy to handle; he could get a better looking finish than with regular concrete. Mixes with a slump of 3 to 3½ in. could be worked easily, even though a 4-in. slump was specified.

The contractor set up a batching plant about 1¾ miles from the site. He delivered the mix in four 6-cu yd transit mixers, which had to be supplemented with two 2-cu yd truck mixers because of the difficulty of getting through traffic. Traffic regulations for the downtown district did not allow deliveries until 9 a.m.

• **Fast concreting**—Once construction got above ground, concreting progressed rapidly and really got into high gear after a typical floor was reached. The schedule for each floor was cut from nine working days to five. As mentioned previously, typical floors were divided into four major pours, of 120 to 140 cu yd apiece, covering 3,700 to 4,000 sq ft. To maintain the high rate of progress, forms for three whole floors were required, but only one set of wall forms.

Like the floor forms, the wall forms were made of plywood. They were braced with 2x4 studs and 2x4 wales. Studs and wales were tied together with band iron, so that the wall forms could be stripped without taking the wales off after each pour. Wall panels were bolted together with joints staggered on the outside and the inside form.

Generally, reinforcing for exterior shear walls was positioned before the forms. Then the inside wall form was erected, after which the outside form was raised from the floor below and set from the upper floor, which was being formed. The procedure with the walls in the central core was similar. The only difference was that the inside form was erected first, then the reinforcement was placed, and finally the outside form.

Column forming was simple, since the column width was kept constant at 48 in. Two sides were formed with single 4x8-ft plywood sheets. In lieu of the regular cleats and collars, patented 30-in. clamps with extensions on the two 48-in. sides were used, with snap ties and hairpins at the extensions.

Floor forms were made of ¾-in. plastic-coated plywood. They were supported on 2x4 joists, 4x4 purlins and adjustable shores. The cantilevers were supported on 4x4 outriggers.

To eliminate as much as possible the rough joints in the decking, all joints were taped with a plastic tape. As a result, less grinding was needed to attain the rigidly specified ceiling finish.

The concrete stairs were required to be constructed to close tolerances and to be placed in some cases "ahead" of the tier to be concreted. This work was expedited with prefabricated metal forms.

Specifications required floors to be reshored for at least two levels below the last level concreted.

William B. Tabler was the architect for the hotel chain. Seelye, Stevenson, Value & Knecht were the consulting engineers. Stanley R. Czark is the resident engineer. Robert E. McKee is the general contractor, with K. Simmons and J. M. McKee as superintendents.

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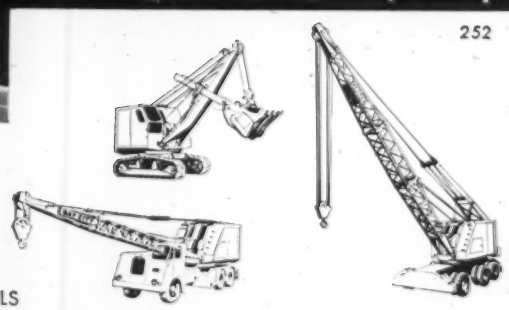

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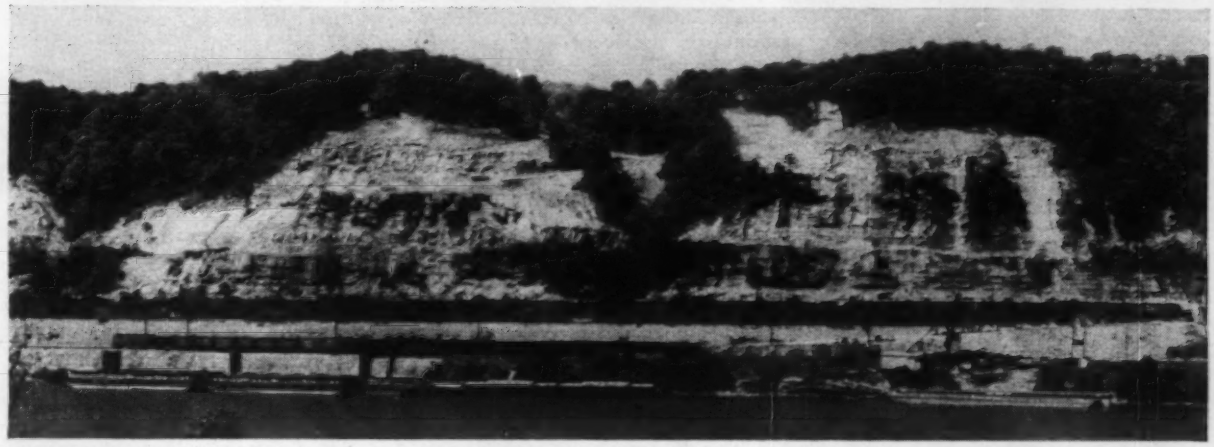
THE PRESENT TWO-LANE HIGHWAY is restricted by steep cliffs on one side and a four-track railroad on the other.



IN CUTTING BACK the contractor is working from benches. Haul roads up side gullies climb grades as steep as 23%.

Highway widening job—

Photogrammetry Speeds Start

Photogrammetry has come into its own, as a time and money saver on a difficult highway widening project in Western Pennsylvania. Applied to every phase of the work from preliminary survey to measurement of final pay quantities for earth excavation, photogrammetric methods are demonstrating their value and versatility as aids to fast highway construction.

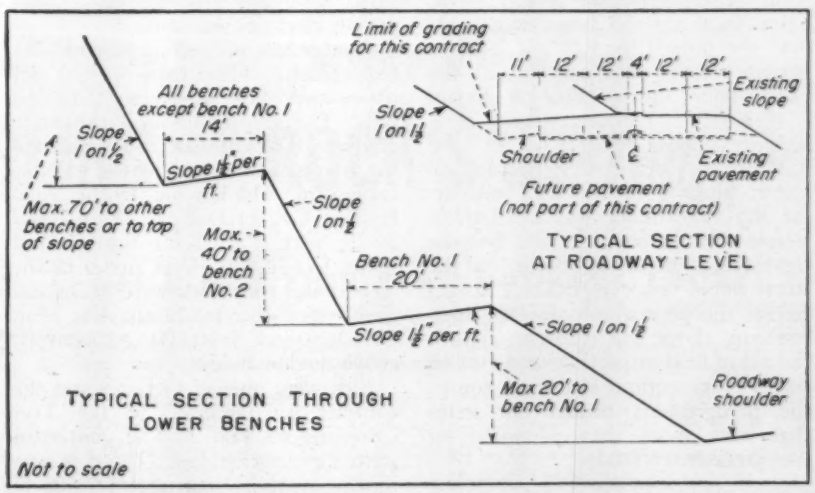
Topography on the 2¼-mile project furnishes a rugged test of surveying techniques. A narrow two-lane road that hugs the toe of precipitous slopes along the left bank of the Ohio River, 25 miles below Pittsburgh, is being widened by cutting back the steep hillsides to open a slide-free corridor for a four-lane divided highway.

• **Difficult mapping work**—Tough terrain made photogrammetry not only advisable but almost indispensable, if the project was to advance with any speed. The area is so rough that topographic mapping by ground methods would have been costly and time-consuming.

The project would have severely tested photogrammetric skills even under the best conditions. But the pressure for speed permitted no delays, forced fast action at every stage of the engineering work.

To meet the urgent needs of the project, aerial photographs for preliminary contour maps were made while the wooded slopes were in full leaf. A little later these preliminary maps—never intended for the purpose—had to serve as the basis for final design and construction plans. To the credit of the photogrammetrists, the preliminary contour maps have stood up under careful rechecks made

(Continued on page 36)


Limit of grading for this contract
11' 12' 12' 4' 12' 12'
Existing slope
Slope 1 on 1½
Shoulder
℄
Existing pavement
Future pavement (not part of this contract)
TYPICAL SECTION AT ROADWAY LEVEL
All benches except bench No. 1 14'
Slope 1 on ½
Slope ½ per ft.
Max. 70' to other benches or to top of slope
Max. 40' to bench No. 2
Slope 1 on ½
Bench No. 1 20'
Slope ½ per ft.
Slope 1 on ½
Max 20' to bench No. 1
Roadway shoulder
TYPICAL SECTION THROUGH LOWER BENCHES
Not to scale

THE NEW SLOPE is being cut back in a manner to insure that rockfalls in the future will not reach the pavement.

. . . Photogrammetry speeds start

later, both by aerial photography and by ground surveys.

• **Widening badly needed**—Improvement of the dangerous 2½-mile stretch of road, between South Heights and Aliquippa, has long been on the priority list of the Pennsylvania Department of Highways. Only the high cost of removing nearly 3,000,000 cu yd of shale, sandstone, limestone and earth has delayed construction until now. Known as Constitution Boulevard, the narrow road belies its exalted name. It looks like what it is—a deathtrap and a bottleneck for the traffic flow.

Hemmed in by a four-track railroad and a steel plant on the river edge, the road is squeezed against hills that rise sharply from the narrow berm of the roadway to heights of nearly 400 ft. Over the years, rockfalls from the cliffs above the road have killed many travelers and have frequently blocked one or both lanes of the constricted pavement. Even without these hazards, the heavily traveled artery is entirely inadequate for the thousands of vehicles that stream through it each day. Present daily traffic is 11,200 vehicles, with 18,000 predicted by 1975.

Two years ago, in May, 1953, the Highway Department engaged the consulting firm of Michael Baker, Jr., Inc., to start at once on a preliminary location survey by photogrammetric methods. Earlier studies had shown that widening of the existing route was the best solution--considerably better than relocating the highway through equally difficult country behind the bluffs.

The consultants moved promptly to take aerial photographs. Their plane, equipped with a camera of 6½-in. focal length, made two flights over the project: one at low level to permit plotting 2-ft contours of the valley floor and another at higher level for 10-ft contours of the overhanging slopes.

With a precision stereoscopic projector, plotting of the 2-ft contours for the valley floor was a relatively simple photogrammetric job. But the tight screen of dense foliage on the steep slopes made it difficult to interpret the photographs for the 10-ft contours above the roadway. With the aid of field inspections and ground survey cross sections at critical points, the topographers turned out maps that were more than adequate for the preliminary study.

• **No time for detail mapping**—In fact, the Highway Department deemed the maps sufficiently accurate for much more exacting use. Just a year ago, the department made a decision to push ahead rapidly with construction and asked the consultants to produce final design drawings for the project in 60 days—along with construction plans for the grading contract—on a basis of the topographic information contained in the preliminary maps and cross sections.

To meet the deadline, the consultants had to rely almost entirely on these earlier drawings. The fast schedule put an unexpectedly heavy premium on the accuracy of the preliminary work.

The volume of excavation as computed from the plotted cross sections amounted to nearly 2,800,000 cu. yd. This computed quantity was used in the bidding proposal, along with a statement that the cross sections had been developed by photogrammetric methods.

• **Pay based on photogrammetric surveys**—In a provision of much greater significance, the contract further specified that the successful bidder must accept photogrammetric methods as a basis for computing final pay quantities. The document first explains that "cross sections for this project have been plotted from a contour map having a scale of 1 in. equals 40 ft which has been developed by photogrammetric methods."

The contract then goes on to stipulate that "upon completion of the project, final earthwork quantities will be computed by plotting final cross sections from another contour map" of the same scale, developed in the same way. Finally, the document states that "the contractor hereby agrees to accept this method of computing final pay quantities."

Contractors showed no fear of photogrammetry. More than 30 took out plans, and about a dozen submitted bids. The consultants and the State Highway Department had estimated the unclassified excavation at $1.60 a cubic yard. The low bid, by the Nello L. Teer Co., of Durham, N. C., was $1.29, with a total for the job just under $3,670,000. Unit prices in the second and third bids were $1.36 and $1.37, and the totals ran less than $200,000 and $300,000, respectively, above the low bidder.

Bids were opened Oct. 22, and the contract was awarded to the Teer Company on Jan. 3. The contractor started excavation Jan. 21 and is now moving material at a rate of 7,500 to 8,000 cu yd per day. Grading will be completed by mid-1956.

• **Field surveys check closely**—Rechecks of the topography have confirmed the accuracy of the original cross sections and quantity estimates within 5%, plus or minus. That degree of accuracy is as good as could be obtained by field survey methods in country as rough as this, where ground parties working the steep slopes and using ropes over the cliffs do well to complete two or three cross sections a day.

One recheck was made by the consultants, who flew the strip at their own expense last Fall to make sure that the preliminary contour map met the heavy demands imposed on it.

Other checks are being made constantly by the contractor's ground survey crew, which takes cross sections in advance of excavation for computing volume by the end area method. This field work so far has corroborated the photogrammetric estimates within 5%.

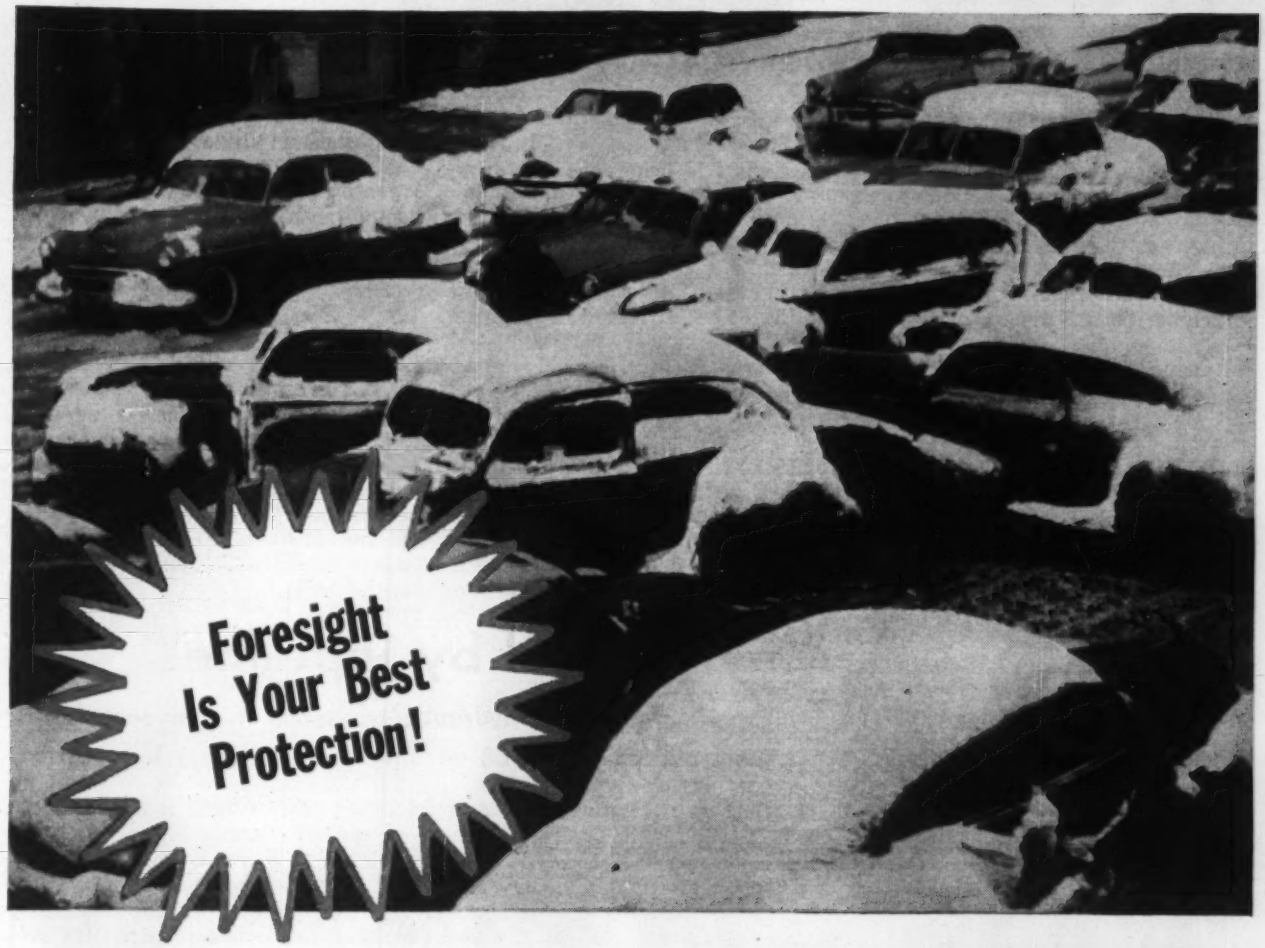
• **Working area restricted**—The existing pavement must be maintained in use during the grading job, and the contractor has to control blasting and earthmoving operations to prevent slides and road blocks. To preserve the present pavement for the time being, the cut now being excavated bottoms out at the existing roadway grade but is widened into the hillside to accommodate the future four-lane divided highway. This widening leaves only minor earthmoving to be done later by the paving contractor.

Cut banks of the project are benched and backsloped to state highway standards. Starting at the side-ditch grade of the future finished project, these standards call for benches at maximum vertical spacing of 20 ft to the first bench, 40 ft from the first to the second, and 70 ft for all higher benches. The first bench is 20 ft wide, but all other benches, for economy reasons, have a width of only 14 ft. Bank slopes are 1 on 1½ for the first rise and 1 on ½ for all lifts above the first bench. Tops of the benches are pitched 1½ in. per foot toward the backslope to catch surface drainage.

Cut slopes run up to 250 ft in height. Benches had to be fitted to the slopes in a switchback pattern to permit future access by maintenance crews from the highway. Designers held bench gradients generally to a maximum of 14%, with short stretches of sharper grades in a few places.

Tight adherence to standards would have required seven benches on the highest slopes. But the Highway Department limited the number to six by allowing a higher rise than 70 ft from the sixth bench to top of slope.

(*Continued on page 38*)



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. . . Photogrammetry speeds start

• **Accurate slope delineation needed**—On cut slopes of these large dimensions, accurate setting of slope stakes is essential. Offsets could not be measured from the centerline survey on the highway, so the ground survey parties ran a parallel line above the limit of cut slopes and carefully correlated the stationing, particularly on concentric curves, to correspond with stations on the master line. As a further check, the parallel line was tied into the highway centerline survey at every gully using an accuracy of second-order surveys, 1 in 10,000.

At each slope stake location, the field crew checked elevations by running levels from bench marks on the parallel survey. This procedure corrected any variation that might show up in a cross section developed from a contour map.

Various estimates can be made of the time and money saved through use of photogrammetry on a project of this kind. It seems safe to say that the start of construction was advanced at least four to six months by photogrammetric methods. There could be differences of opinion over the amount saved in engineering costs, but people familiar with the project say that—in terrain of this character—photogrammetry reduces survey costs by 80 to 90%.

• **Big disposal problem**—All excavated material has to be wasted, and the logical place to dispose of it is on upper levels bordering a half dozen gullies that break the solid front of the steep hillside. The contractor builds his haul roads up the banks of these ravines. By buying one disposal area and paying for dumping rights at a couple of others, the contractor hopes to hold land charges for waste dumps to 6 or 7 cents a cubic yard.

Up to the middle of May, the contractor was averaging about 7,500 cu yd per 10-hour day. Payments are made semi-monthly for estimates based on load counts, with a percentage retained by the state. The semi-monthly estimate for May 15 was 94,000 cu yd. At that time the major equipment on the job included two 4-yd and one 2½-yd shovel loading 16-yd end-dump trucks.

• **Skillful drilling needed**—Drilling and blasting are a problem on the sheer slopes above the existing road. The contractor cannot fine-shoot the outside rock in cutting benches; this rock has to be utilized as a buffer wall to confine the blast and prevent spillage on the road below. As a result, the shovels have to handle the outside rock in big chunks.

An effort is being made to overcome this difficulty by vertical drilling of the buffer rock with wagon drills, to get better breakup of the outer wall without showering it down on the road. The attempt had to wait until the third week in May, when the job received three wagon drills and a rotary to supplement its previous vertical drilling equipment. Up to that time, there were only two vertical rigs on the site, a wagon drill and a rotary, and the shovels kept pressing hard on the drillers.

Narrow benches make excavation tougher for the contractor. The restricted 14-ft width hampers spotting and loading of the big trucks and confines passing points to turnouts on the haul roads. These difficulties, of course, were obvious before the job was bid, and the Teer organization is taking them in stride.

Credit for fast photogrammetric action on the project is shared by the Pennsylvania Department of Highways and Michael Baker, Jr.'s firm. For the state, Joseph J. Lawler is Secretary of Highways, George J. Richards is Deputy Secretary and Chief Engineer, and Leonard J. Curran is District Engineer at Pittsburgh. Services of the consulting firm, headed by Mr. Baker, are under the general direction of Robert L. John and Christian F. Eben, with Joseph Mundo in immediate charge. William W. White is resident engineer on the project for the Highway Department, and Robert E. Tidwell is superintendent for the Nello L. Teer Co.

Moving Coal by Pipeline

Experimentation on hydraulic transport of coal goes full-scale as design of 108-mi mine-to-powerhouse line starts

Pipeline transportation of coal is coming for the U. S. Pittsburgh Consolidation Coal Co. and Cleveland Electric Illuminating Co. have announced a mine-to-powerhouse project.

A 108-mi pipeline—to take 1.2 million tons per year for 15 years from mines at Georgetown, Ohio, to CEI's Eastlake steam station—will be constructed with cooperation of the railroads now serving both the mine and the power plant. Estimated cost is $10 million.

Consultants Ford, Bacon & Davis did a feasibility study on which Pittsburgh Consol's decision to go ahead was based. The coal company also has put about five years and maybe a million dollars into experimentation, including a 17,000-ft pilot line at Library, Pa. Even the full-scale, 108-mi line FB&D now has been ordered to design, will be experimental in many respects, as the nation's first commercial coal pipeline.

Pittsburgh Consol is closemouthed on technical details of the pipeline under design—for competitive reasons. Only this much has been reported:

There will be three pump stations about equally spaced to move a 50-50 coal-water slurry, at a rate of 3 mph in 10¾-in. pipe.

• **Much more is known**—With this first commercial venture into coal pipelines coming closer to reality, the fund of knowledge on hydraulic transportation bears reviewing. Although secrecy may envelop the Georgetown-Eastlake pipeline until it becomes an operating facility, much is already known from research and actual installations both here and abroad.

To begin with, hydraulic transport of solids is a classic method. It's as old as the hills—and the rainfall that washes the hills.

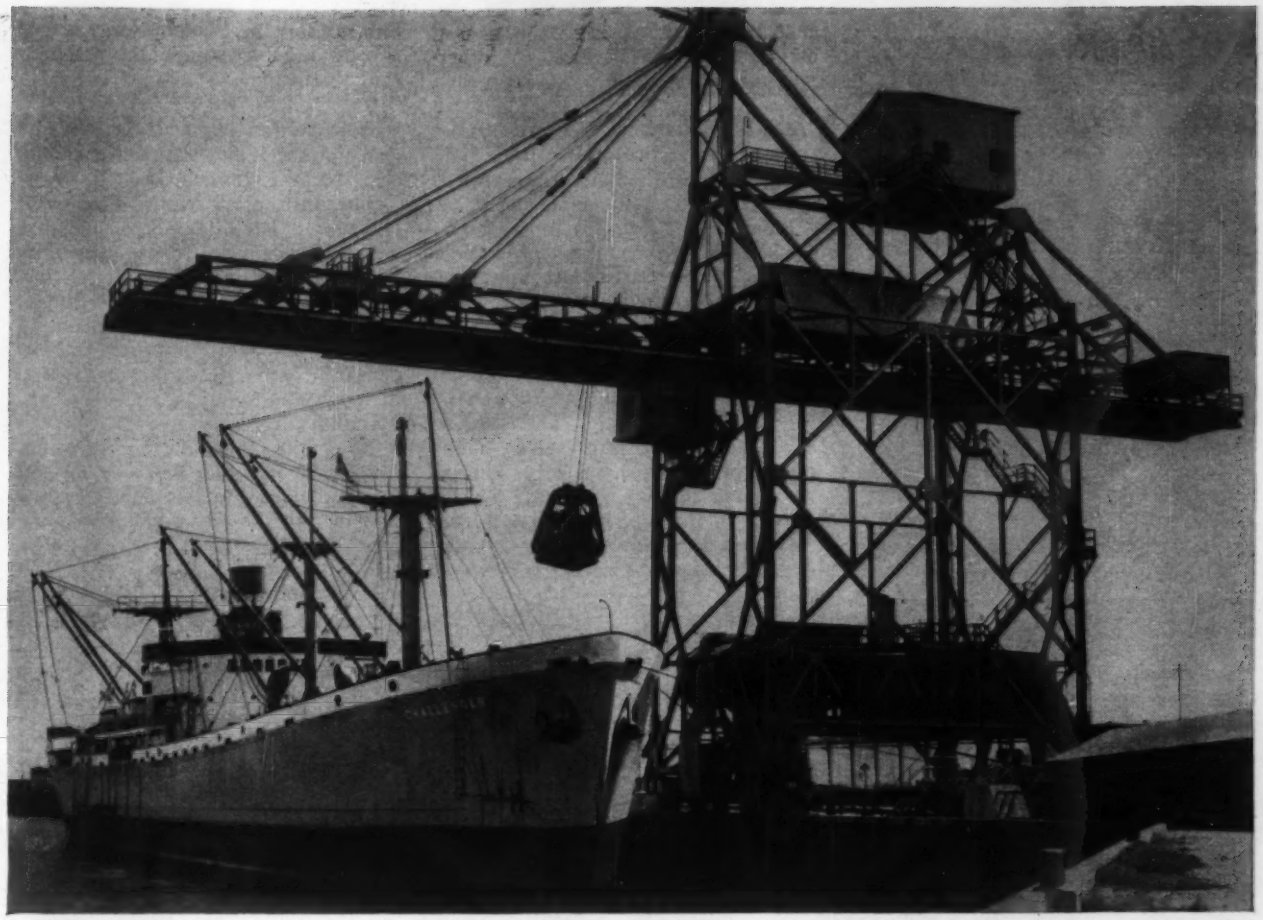
Among the first solids moved in water by man were soils, as hydraulic dredging was learned. Dredging in connection with civil engineering works even today leads the field of hydraulic transport: 100,000,000 cu yd of hydraulic fill went into Fort Peck Dam on the Missouri River; 160,000,000 cu yd so far have come out of Beauharnois Canal on the St. Lawrence. These are two large civil engineering projects involving hydraulic transportation of solids.

And at Copper Cliffe plant in northern Ontario, 4,000,000 tons of nickel ore per year have been pumped.

• **But more must be learned**—Hydraulic transport of coal is not exactly new either. The first U. S. patent was dated 1895. Earlier, a ship-to-shore line was used in New York City. In England, a 660-yd pipeline at Hammersmith Power Station was operated from 1913 to 1924.

France for most of eight years has had a five-mile line carrying washed slurry from mine to power stations at Carling in Lorraine.

But little has been done about the lack of exact information on coal pumping until this present decade. Data on hydraulic movement of solids



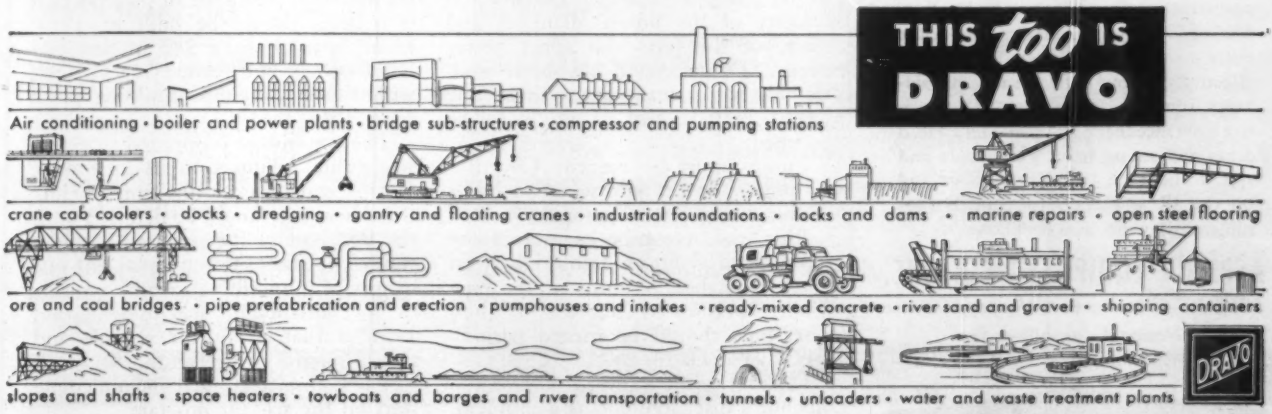
GIANT ORE SHIP COMPLETELY UNLOADED IN 30 HOURS!

This Dravo-designed and built ore unloader at Mobile, Alabama, is setting records in handling incoming Venezuelan ore for southern steel mills.

The new terminal, operated by The Marine Bulk Handling Corporation, unloads ore for use in blast furnaces at U. S. Steel's Tennessee Coal and Iron Division mills at Fairfield, Alabama.

As an example of high speed handling, an ore ship carrying thirty thousand gross tons is completely unloaded in 30 hours. In regular service, the Dravo machine has operated at a rate of 1800 tons per hour. Ore is moved from the unloader to railroad or river barge loading sites by belt conveyor.

Such performance is typical of many heavy material handling systems furnished for industrial plants and utilities throughout the country. It is further evidence of how Dravo has been serving business and industry in many engineering fields for over 60 years, with customer satisfaction always considered an essential aim in every transaction. DRAVO CORPORATION, PITTSBURGH 25, PENNA.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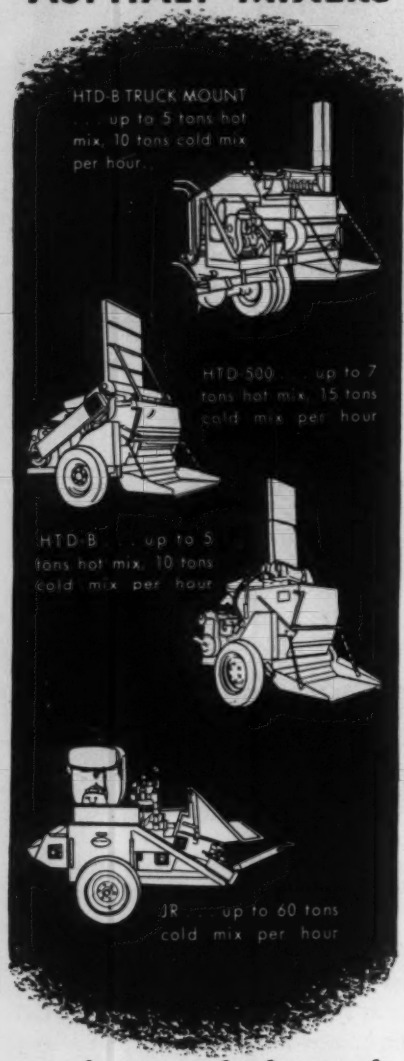
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HTD-500
up to 7 tons hot mix, 15 tons cold mix per hour
HTD-B
up to 5 tons hot mix, 10 tons cold mix per hour
JR
up to 60 tons cold mix per hour

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that are lighter and heavier than coal are not analogous, because of difference in energy required to keep each moving.

Britain's National Coal Board has fostered research, and in 1952 held a colloquim on hydraulic transport of coal. Among participants were researchers from France's Neyrpic Hydraulic Laboratories at Grenoble who revealed some relative cost figures developed at Carling:

Coal slurries (particles 0 to 1/25-in.); coal "duffs" (0 to $\frac{1}{8}$-in.), and coal lumps (1- to 4-in.) were found movable at costs per ton-mile increasing in a 1:2:6 ratio. The slurries, called mud, and the so-called "duffs" move in suspension; larger lumps move by saltation.

In 1951 the U. S. Bureau of Mines published "A Survey on Hydraulic Transportation of Coal." Studies that went into this report included the following estimate of a 100-mi, 200-ton-per-hour coal pipeline:

• **Costs: a hypothetical case** – This 100-mile pipeline would cost $10 million; carry a 25% volume of coal in suspension; use 186,000 gal per hr of water; use a 12-in. pipe for coal transport and a 10-in. line for water return; require 13,387 hp for its pumps.

Operating costs for a 360-day year were figured at $1.91 per ton or $0.019 per ton-mile. This 1951 estimate included depreciation, taxes and interest, as well as power, maintenance, supervision and overhead. At the time, it was compared with an "average" rail transportation cost for coal of $0.021 per ton-mile.

Costs of installation and operation might be cut something on the order of 10% where water return was unnecessary or avoidable.

Power requirements would vary, but are generally dependent on coal particle size, size distribution, and density (25-40% coal has been called the economical range, although the proposed Ohio project reportedly would pump 50% coal). Density and velocity of the liquid, diameter and shape of the pipe also affect power needs. Diameter, it has been said, should be at least three times the largest particle size of solids to be pumped.

Pumps must be rugged. Centrifugal pumps do the job; so do single or double-acting piston pumps.

Pipe, too, must be rugged. Some recommend a more durable lining on the bottom half or third of the pipe where abrasion is heaviest. Otherwise, pipe should be turned periodically to equalize wear.

Dewatering of pumped coal at the pipeline's discharge end is a problem, but nothing for which there is not already suitable equipment commercially available.

• **More studies planned**–Such is the gist of what is now known of piping coal. More is coming.

The Bureau of Mines announced last winter (ENR Jan. 27, p. 27) that it would begin in July a feasibility study on pipeline transport of low grade Rocky Moutain coal. Bureau researchers were reported as planning to correlate all known information, to determine costs, needs for special pipe materials, and effects on rail transportation.

As it looks now, work at the bureau's coal laboratory will be limited to consolidating "all available information on the subject" and doing some basic research.

It would seem likely that the more useful, dollars-and-cents data will come out of the actual installation and operation of a long, overland coal pipeline–such as Pittsburgh Consol now has under design.

Many questions need answering on the hydraulic transport of coal, and the first coal pipeline should answer many of them. Questions involve hydraulics, strength of materials, electricity demand, and controls. Finally, there are the paramount concerns of costs, economics, and relationship to competing media of transportation.

$195-Million Building Plan Faces Delay in Minneapolis

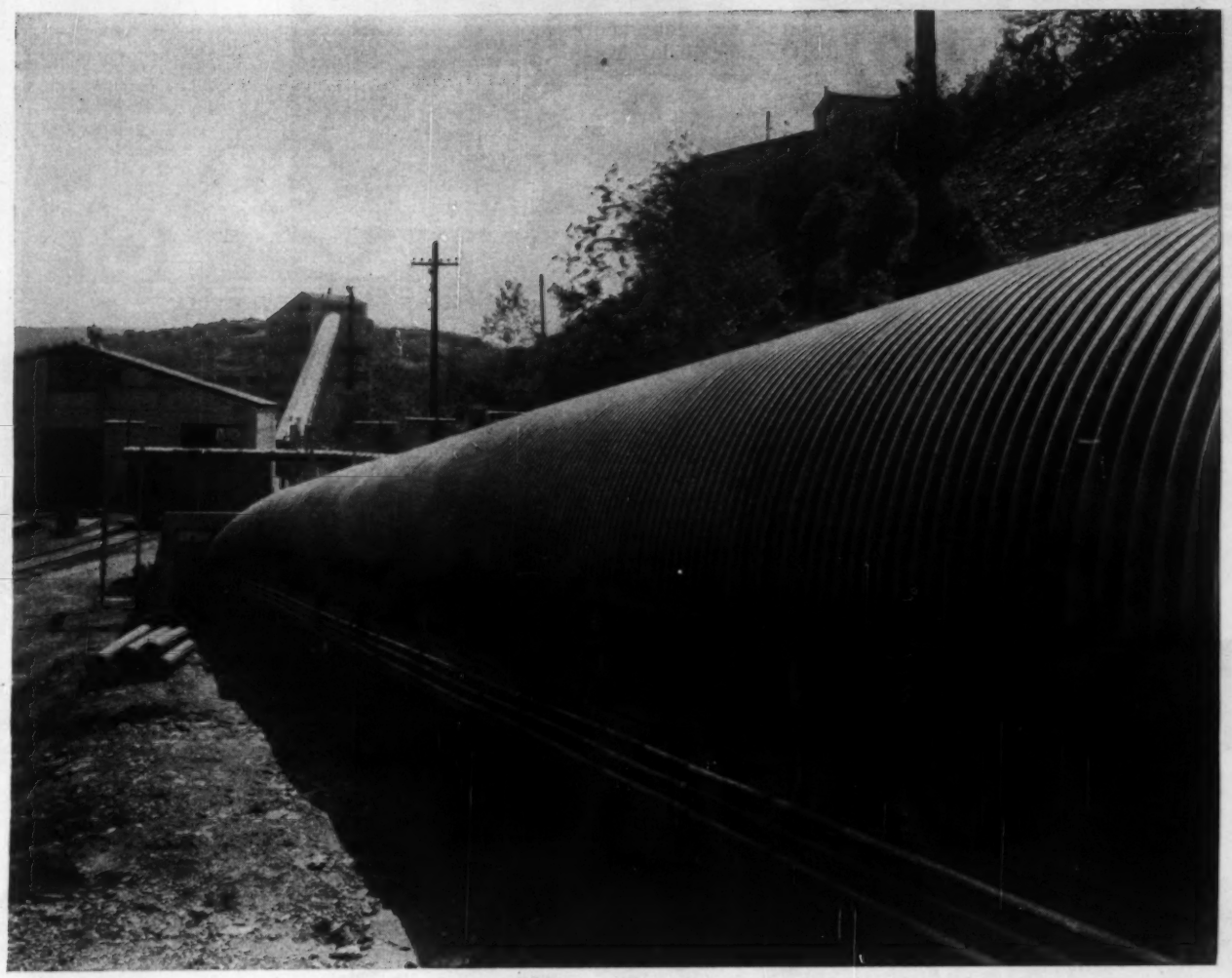
A proposed $195-million, long-range capital improvements program in Minneapolis may run into a serious delay, because of demands by some councilmen and other officials that the priority of projects be reviewed.

A civic committee, set up more than a year ago, drew up a 20-year, $194,600,000 schedule of public buildings needed by the city, with financing proposals to pay for the mammoth construction program.

In a two-part report, the committee first approved a list of projects that it believes should be built by 1961, to be financed by a $42 million city bond issue. The second report dealt with the city's public building plans from 1961 to 1975.

The committee is opposed to extensive public hearings on its long-range recommendations at this time, feeling these hearings should be deferred until the first part of the program is under way. The committee pointed out one danger of pinpointing specific projects in a construction schedule beyond 1961 is that needs for schools and recreation are "unforseeable."

The committee urged an immediate start on the six-year program.



ALCOA ALUMINUM INDUSTRIAL SHEET "IN GOOD CONDITION" AFTER 23 YEARS OF SEVERE SERVICE

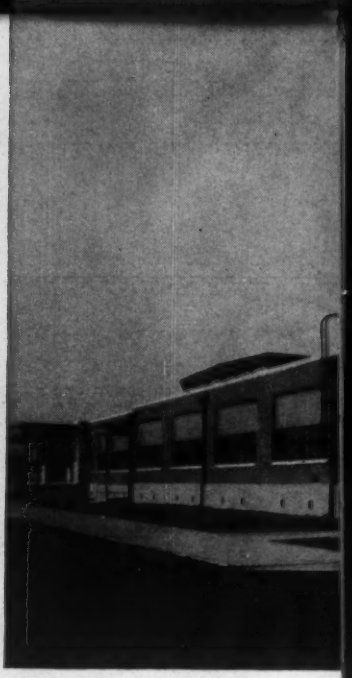
Over twenty years at hard labor, and still going strong! That's a recent report on Alcoa® Aluminum Curved Corrugated Sheet by The Philadelphia & Reading Coal & Iron Company.

Alcoa Aluminum was installed as the conveyer covering of their St. Nicholas Central Breaker located in Schuylkill County, Pa., in 1932. Exposed to rigorous weather and corrosion conditions since then, it is still in good condition.

Alcoa Aluminum was specified by Stone & Webster Engineering Corporation, the builders, because of previous unsatisfactory experience with other materials. Slightly higher in first cost, the lighter weight of aluminum made it easier to handle, less expensive to erect. And the savings on maintenance and replacement proved it the most economical buy by far.

Alcoa Aluminum Curved Corrugated Sheet is just one of the many modern building materials developed by Alcoa. For complete information on these construction cost cutters, call your local Alcoa sales office. Or write for your copy of our A. I. A. file on Alcoa Aluminum Industrial Building Materials. Aluminum Company of America, 860-H Alcoa Building, Pittsburgh 19, Pa.

Your Guide to Aluminum Value

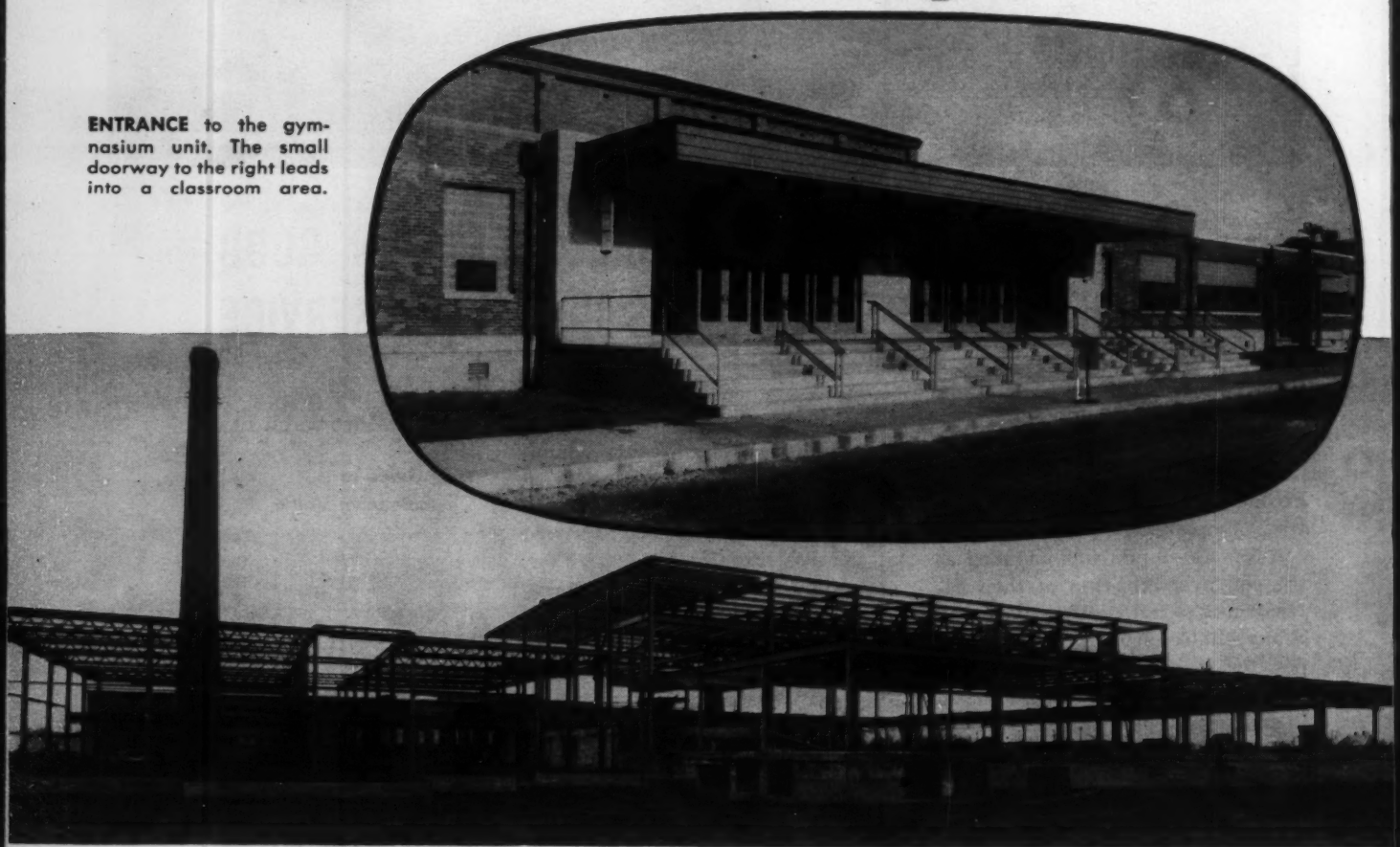


THE MAIN ENTRANCE of Assumption High School. The architects were Paul J. Saunders and Eugene S. Johnson. The engineer was John P. Nix. The general contractor was Wm H. and Nelson Cunliff Co.

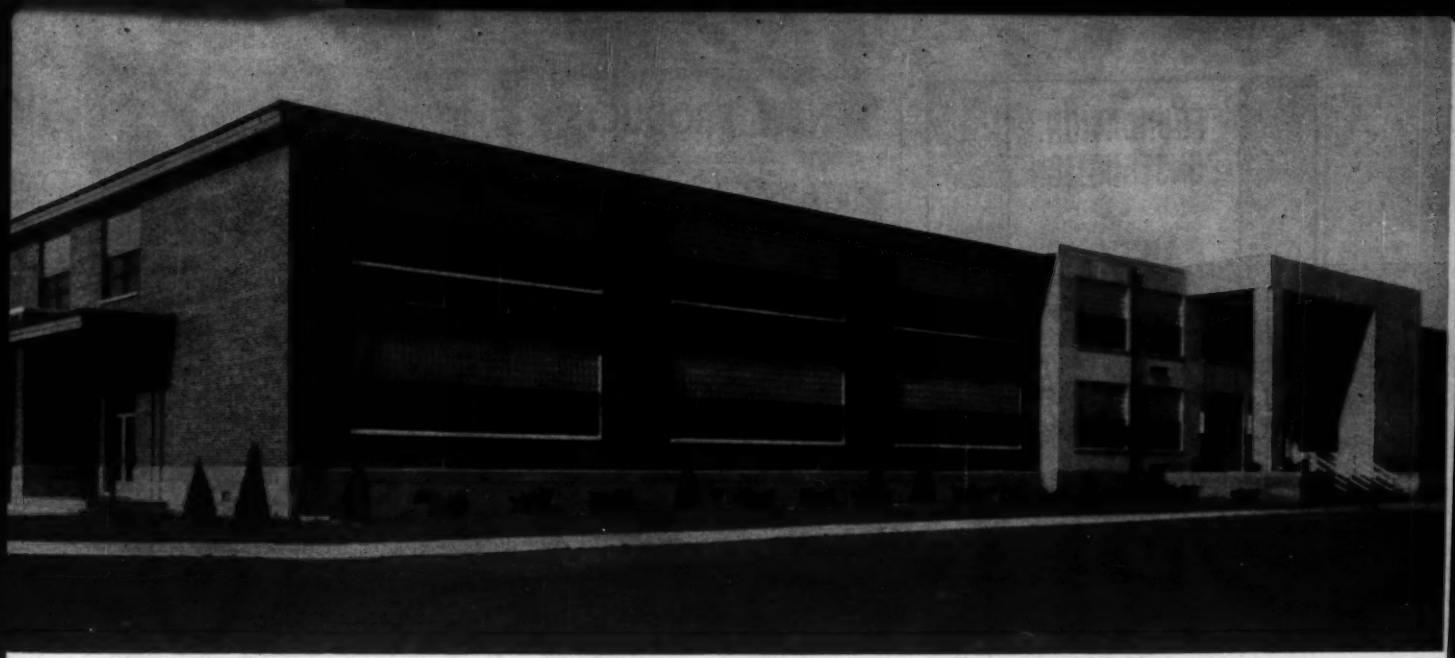
TWO STORY ACADEMIC UNIT, connected to the one story unit to which a second floor may be added in the future.

New High School designed with

ENTRANCE to the gymnasium unit. The small doorway to the right leads into a classroom area.



THE STRUCTURAL FRAMEWORK during erection. The more than 348 tons of USS Structural Steel, used in the building, were fabricated by The Mississippi Valley Structural Steel Co., St. Louis, Mo.



future expansion in mind

The Assumption High School of East St. Louis, Illinois, was built to accommodate 650 students with provisions for expanding horizontally and vertically to provide facilities for an eventual one thousand students.

The school consists of three units: an academic unit containing classrooms; a gymnasium unit including gymnasium, cafeteria, shops, and laboratories; and a Brother's House, independent of the other buildings, which contains living quarters for 24 Brothers. The academic unit has provisions for expansion to the east. In addition, a second floor can be added to the present one story portion. The Gymnasium Unit is designed so that there is sufficient physical education, shop, laboratory, and cafeteria space for additional students if classroom facilities are increased.

Structural Steel was used exclusively in the framing of this new school because of its versatility, its tremendous load bearing capacity, and its economy of use—qualities that make it ideal for *all* types of school construction. Small wonder that today's architects and engineers are specifying Structural Steel frameworks for more and more schools, churches, and small buildings. Just look at these advantages:

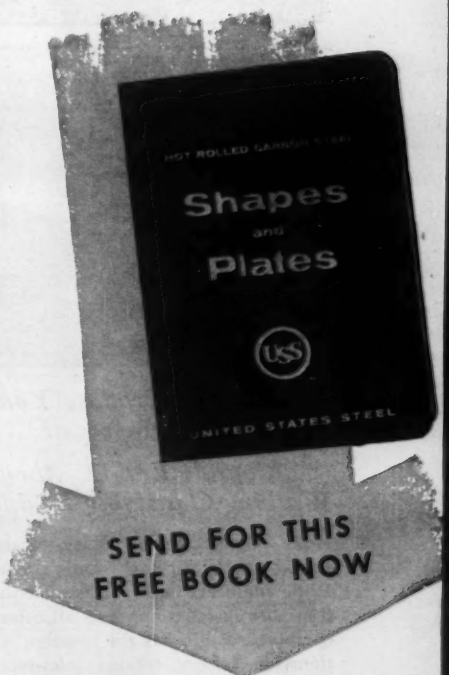
1. Structural Steel is the strongest, yet most economical of load bearing materials.

2. Structural Steel will withstand more abuse than other structural materials, effectively resisting torsion, tension, compression, and shear.

3. Once enclosed in buildings, it lasts indefinitely—requiring no maintenance.

4. Structural Steel may be riveted, bolted or welded . . . can be erected in any weather in which men can work.

5. Steel members are fabricated indoors; therefore, weather can have no effect on the quality of workmanship.



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NEW PRODUCTS

STEEL BREAKOUT PADS on the ends of the boom arms serve as a fulcrum for the pry-out action of the bucket. Rollback of 40 deg enables machine to get bigger loads.

UNDERSLUNG BOOM ARMS do not require safety guards or screens since that part of the boom nearest the cockpit remains below the danger zone even at high lift.

Third New Payloader Has Power Shift

With a slight modification of an old saw, operators of the new Model HO Payloader might well exclaim, "Look, Ma, no feet." Along with features previously introduced on two smaller models—the HU and HH (ENR June 2, p. 59)—the HO is equipped with a newly developed power shift.

Not only has the clutch pedal been eliminated, but the power shift is labeled "complete," inasmuch as all shifts through all speed ranges in both forward and reverse can be made without stopping or even slowing down.

Operating cycles of larger capacity tractor-shovels naturally are slower since heavier loads make it necessary to shift frequently between working and travel speed ranges. The "complete" power shift—since it can be done with a twist of the wrist and without stopping—can simplify the operator's task and thus add to the machine's speed and productivity.

Among the features handed down to the HO from the HU and HH are pry-out action and 40 deg of bucket rollback. The pry-out bucket action is accomplished by using steel break-

out pads on the ground as a fulcrum for leverage. Opposing load forces are transferred to the ground through the pads during breakout instead of to the axles, wheels or hydraulic system. The 40 deg of rollback is accomplished at ground level and aids in retaining larger heaped loads.

Similar to the two smaller models in outward appearance, the HO has the same type of boom arm—underslung in design and position for greater safety and visibility. The need for safety guards or screens to protect the driver from the boom arms during rising and lowering operations has been eliminated since that part of the boom which is near the cockpit remains below the danger zone even at maximum lift.

Emphasis on driver comfort has been given with an adjustable seat upholstered with foam rubber bottom and back cushions.

According to the manufacturer, the ability of the machine to cradle a load closein combined with a long wheelbase provides maximum stability. Further, it is claimed that the HO has greater horsepower and more weight than other standard 2-yd machines. The unit is available with either gasoline or diesel power.

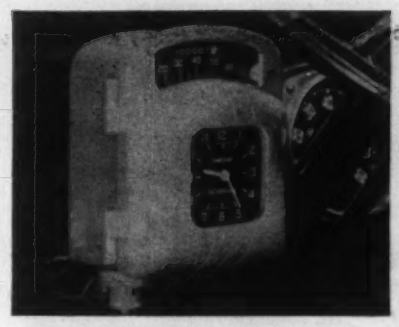
Other features include: sealed, pressure-controlled hydraulic system; 12-v battery system on the gas-powered model with battery box and hydraulic oil reservoir mounted behind driver's seat for accessibility; torque converter; double-acting hydraulic rams with chrome-plated piston rods; vacuum-boosted, four-wheel hydraulic brakes and power steering are standard; and a load-shock accumulator device is optional.

Both head and rear driving lights as well as tail lights are standard and an exterior pick-off outlet for outside hydraulic circuit use with auxiliary equipment has been provided. THE FRANK G. HOUGH CO., 772 SEVENTH STREET, LIBERTYVILLE, ILL.

Instrument for Maintenance Checking Gets a New Design

The Model AA Tachograph, an instrument used for analyzing vehicle operation and movement, has been remodeled for greater durability and easier operation. The device records on a chart the miles and speed traveled, idling time and total operating time. This information can be used to reduce maintenance costs and encourage safe driving practices.

The new case is made of cast aluminum and the clock face, speedometer and odometer are of a new design and are lighted for better vision. A warning light can be set by the driver to conform with prevailing



speed limits. WAGNER ELECTRIC CORP., 6400 PLYMOUTH AVE., ST. LOUIS 14, MO.

Foil-Backed Fibreglas Available for Residences

A new residential building insulation combines the insulating efficiency of Fibreglas with the added summer reflective characteristics of aluminum foil.

The outer or breather side which provides a reflective surface, is perforated to avoid any buildup of moisture in the insulation. The aluminum foil on the other side of the product provides a vapor barrier.

The foil-enclosed insulation is produced in both batts and roll blankets and has the usual flanges for nailing or stapling to wall studs and floor joists. It is produced in widths of 15, 19 and 23 in. for use with studs spaced 16, 20, and 24 in. and in thicknesses of 2 and 3 in. Depending upon width and thickness, the roll blankets are in lengths up to 60 ft., while all batt blankets are 4 ft long. OWENS-CORNING-FIBREGLAS CORP., TOLEDO 1, OHIO.

Dial Card Gives Radial Saw Settings for Cutting Rafters

A handy dial-type meter is available which explains the operations involved in cutting the common roof rafter. It can be used to pre-determine the angles for level and plumb cuts without employing a carpenter's square.

To operate, the user dials the circular wheel to any one of nineteen common roof pitches. Then, in a window cutout, he reads the indicated miter settings for the desired level and plumb cuts, the length per foot of run, and the rise per foot of run for that particular pitch.

A typical example of rafter preparation is diagrammed on the front side of the 4 x 8-in. meter card. Here the technical terms covering the cuts and construction are explained and their relationship to one another is defined. On the reverse side, instructions for the actual positioning of the radial saw

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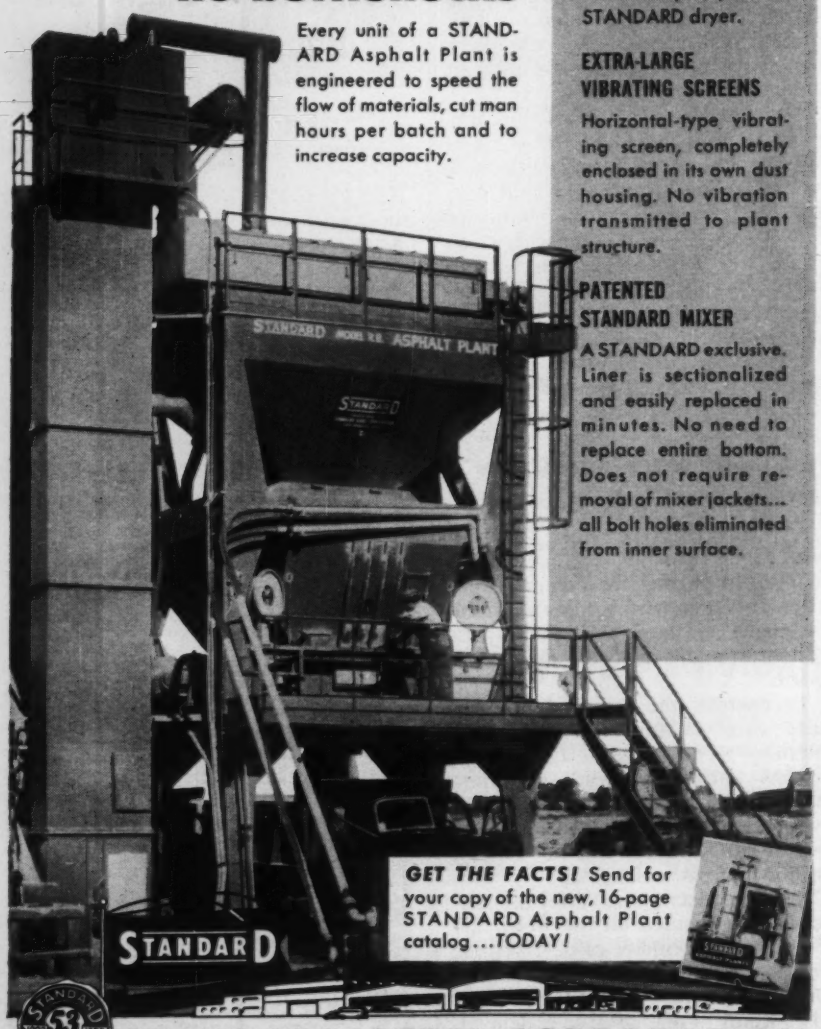

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are presented in test, diagrams, and photographs. Price is 25¢. DEWALT, INC., LANCASTER, PA.

Large Diameter Roll Crusher Produces ¼ to 5-in. Material

A new 55 x 30-in. roller bearing roll crusher reportedly can be used for any secondary crushing operation where a roll crusher is acceptable. The large diameter of the rolls is said to make it possible to handle exceptionally large feed.

With 20% wider roll shells, capacities range up to 520 tons per hour depending upon size of finished product desired and characteristics of the material. Maximum finished size is 5 in. and minimum is ¼ in.

The Model 5530 can be equipped with two smooth roll shells, two corrugated ones or one of each depending upon operating requirements. The opening between the rolls can be adjusted by inserting or removing shims in a slot on top of the frame. IOWA CO., CEDAR RAPIDS, IOWA.

Portable Generator Delivers 10-kw at Commercial Voltages

The Mo-Bil-Ac, a portable source of ac power, delivers up to 10 kw at 110-220 v. Using the engine of the vehicle in which it is carried, the unit supplies alternating current at commercial voltages and frequencies, single or polyphase.

A feature of the generator is said to be its compactness and light weight. The two-pole alternator, which forms one half of the two-part unit, may be mounted under the vehicle hood and driven by a V-belt from a sheave on the crankshaft in front of the fan pulley, or by a power take-off. To keep down size and weight, excitation is provided by rectifying a part of the alternator output instead of using a rotating exciter.

The other half of the system is the regulator, a static unit of the magnetic amplifier type with a selenium rectifier to provide alternator excitation. Measuring only 10 x 6 x 7 in., the regulator has encapsulated windings in order to provide protection against moisture and vibration.

Regulation is very close and transient response of the system is said to be such that when full load is applied, voltage recovers to full setting in one second or less.

Units rated at 3, 5, and 10 kw are in production and other ratings can be designed. STAR-KIMBLE MOTOR DIV., MIEHLE PRESS MFG. CO., 200 BLOOMFIELD AVE., BLOOMFIELD, N. J.

OBITUARIES

J. C. Dawes, 76, noted British sanitary engineer, died last month in London. He was recognized as the man who put "sanitary land fill" on a scientific basis. After several decades of acceptance in Britain as an economical means of refuse disposal, the method was introduced in the U. S. in the early 1930's and is now used by more than 1,000 cities. Until his retirement five years ago, Mr. Dawes had been sanitary engineer with the British Ministry of Health for many years. At the age of 70, he was selected as the first sanitary engineer consultant for the World Health Organization and in this capacity made a study of U. S. refuse disposal practices.

Brice W. Eanes, survey engineer for the South Carolina Highway Department for the past 15 years, died in Greenville, S. C. July 16.

Lawrence P. Gallagher, who was associated with Toledo's city engineering department from 1935 until his retirement six years ago, died July 10. Prior to coming to Toledo, he was a civil engineer with the Interstate Commerce Commission for 20 years.

Julius W. Bugbee, 84, sanitary engineer and retired superintendent of the Providence, R. I., sewage disposal plant, died at Providence on July 20. He was graduated in 1890 from Worcester Polytechnic Institute. After serving several years as a chemist for the city of Worcester he went to Providence, where he worked on waterworks and sewage treatment projects until retirement in 1943. He was a former president of the New England Sewage Works Association.

Charles A. Pohl, 75, known for his engineering work on hydraulic and power development and in the field of hydroelectrics, died July 1 in Watertown, N. Y. He was a graduate of Clarkson College and at one time headed the New York City engineering firm of Bogart & Pohl.

John S. Ward, 71, Seattle civil engineer, died July 16. In recent years he served as president of Cascade Contractors, Inc., a firm that participated in the construction of Bonneville Dam and is now engaged as one of the contractors for The Dalles Dam in Oregon. Ward attended the University of Washington and was Lewis County engineer at Chehalis, Wash., for several years following World War I.

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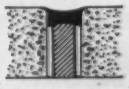
***Hot Poured Para-Plastic* JOINT SEALER**

Forms a resilient, adhesive and effective plastic seal which maintains bond down to sub-zero temperatures. Para-Plastic JF Sealer recommended for sealing joints exposed to disintegrating action of petroleum solvents. Both types may be pumped directly from melting kettle into joint. Adheres to concrete, steel, etc.

Joints compressed in warm weather temperatures



Joints opened in sub-zero temperatures

***Premolded Para-Plastic* JOINT SEALERS**

Used in keyed construction joints.

Sealing at footing.

Para-Lateral sealing rear face of wall.

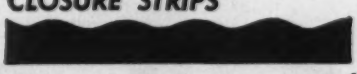
MOLDED *Para-Plastic*

For sealing keyed contraction or construction joints in vertical or horizontal concrete surfaces. Maintains bond at temperatures down to 0° F and insures a resilient, moisture-tight seal.

Para-Lateral Strip

Designed for sealing backfilled vertical construction or expansion joints in retaining walls, abutments, foundations, wing wall, etc. against seepage to exposed side. Rigid backing may be nailed directly to forms, or strip may be applied to poured wall.

***Corrugated* CLOSURE STRIPS**



A complete line for sealing corrugated construction against weather elements and heat loss. Available in Asphalt composition, rubber composition or KORK-PAK. KORK-PAK is most resilient non-sagging type and is low in cost. Types available for steel, asbestos cement, aluminum and corrugated glass sheets.

Inner and Outer closure strips sealing cove and outer wall.

Inner closure strip sealing corrugation at foundation.

RUBBER WATERSTOPS

A complete line of Flat Dumbbell, Hollow Bulb and fabricated tee's and ell's available. New Split Dumbbell Type eliminates split bulkheading, saves time and labor. Write for special Waterstop Catalog.

CONCRETE CURING COMPOUND

A clear membrane forming liquid for spray or brush application to insure proper water control in curing concrete. Two types . . . Wax-Resin and Resin Base. Does not discolor finished concrete. Write for special curing compound circular.

Get a copy of Servicised's complete catalog on products for industrial construction.

SERVICISED PRODUCTS CORPORATION
6051 WEST 65th STREET • CHICAGO 38, ILLINOIS

FOR SAFE AND SPEEDY HOISTING

Heavy construction calls for heavy-duty blocks and MADESCO blocks combine the performance features developed through 30 years of specialized engineering for the construction field. Heavy steel shells and fittings, heavy iron or steel graphite-bronze, self lubricating sheaves are grooved to give you the maximum return for your rope investment. Sheaves equipped with bronze or anti-friction bearings for easy operation and long service.

Our special service departments will help you with their recommendations. Write for our catalog or consult your equipment dealer who can supply you with MADESCO products.

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MADESCO TACKLE BLOCK CO.
EASTON, PA.

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Your Special Service Needs

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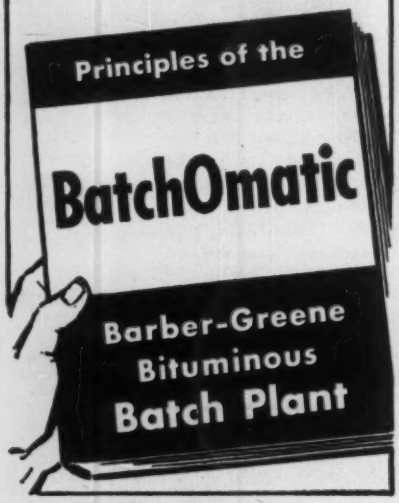

Explains New
- aggregate measuring
- asphalt measuring
- Dyna-mix Pugmill
- other new principles

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AURORA, ILLINOIS, U.S.A.

MEN AND JOBS

Capt. G. S. Robinson

Naval Officer With JCA Is Honored by France

France has conferred the Croix de Chevalier of the Legion of Honor on Capt. George S. Robinson, CEC, USN, for his outstanding services in furthering the NATO and U. S. Military construction programs in France.

Since April 1953, Capt. Robinson has been serving as Chief of the Operations Division of the Joint Construction Agency, the tri-service military group which is responsible for all Army, Navy and Air Force construction being built in France by French firms for U. S. military use.

A civil engineering graduate of Renssalaer Polytechnic Institute, Capt. Robinson was a bridge engineer with the New York State Highway Department before he entered the Navy in 1937. He has had a number of public works and construction assignments in the United States and has served overseas on construction projects in the Philippines, Cuba, Jamaica, Haiti, the Bahamas and Okinawa. For his work in Haiti, he was made Commander of the Order of Honor and Merit—the republic's highest award.

Capt. Robinson is returning to the United States this summer for reassignment to Washington, D. C. There he will become Technical Advisor in the Shore Establishment Division, Bureau of Aeronautics.

Stone & Webster Appoints W. L. Sheets to New Post

William L. Sheets, of Los Angeles, Calif., has been appointed a construction manager of Stone & Webster Engineering Corporation, with headquarters in the company's Boston office. He has been with the company since 1941, serving for the last nineteen months as general superintendent of construction in the West Coast area and as manager of the Los Angeles office.

Although Sheets first joined the organization in 1929 as instrument man and sheet piling inspector on the Osage Hydroelectric Project in Missouri, he later spent ten years with the St. Louis office of the Corps of Engineers. He worked during that period on engineering and construction phases of levee and dike work.

After his return to Stone & Webster in 1941, Sheets served as contract engineer and resident engineer on government ordnance projects in Illinois and Pennsylvania and on the Manhattan District Atomic Energy Project at Oak Ridge, Tenn. He was later in charge of construction on the Redondo and Etiwanda steam plants and other projects for the Southern California Edison Co.

Army Engineer Is Assigned To Mississippi River Units

Col. Milton P. Barschdorf has been named secretary, Mississippi River Commission, and assistant division engineer, Lower Mississippi Valley Division, Corps of Engineers. He succeeds Col. Charles F. Mitchim, recently transferred to Supreme Headquarters, Allied Powers, in Europe.

In his new post, Col. Barschdorf will assist Brig. Gen. John R. Hardin in the supervision of the Army Engi-

Col. M. P. Barschdorf

1105...YES, ELEVEN-O-FIVE

Is the new-strength wire in Roebling's

Royal Blue

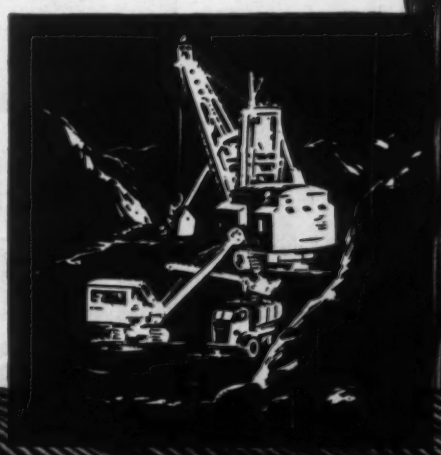
WIRE 1105 ROPE

AS SIZES and constructions go, Royal Blue is like the ropes you have used until now...but the likeness ends there.

Royal Blue is made of Roebling's new 1105 wire, the strongest, toughest wire developed up to now for use in any wire rope.

Royal Blue Wire Rope is as enduring as the wire from which it is made.

Write us for full facts on Royal Blue Wire Rope, or contact your Roebling distributor.



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JOHN A. ROEBLING'S SONS CORPORATION, TRENTON 2, N. J. BRANCHES: ATLANTA, 934 AVON AVE. • BOSTON, 51 SLEEPER ST. • CHICAGO, 5525 W. ROOSEVELT RD. • CINCINNATI, 3253 FREDONIA AVE. • CLEVELAND, 13225 LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON ST. • DETROIT, 915 FISHER BLDG. • HOUSTON, 6216 NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR ST. • NEW YORK, 19 RECTOR ST. • ODESSA, TEXAS, 1920 E. 2ND ST. • PHILADELPHIA, 230 VINE ST. • SAN FRANCISCO, 1740 17TH ST. • SEATTLE, 900 1ST AVE. S. • TULSA, 331 N. CHEYENNE ST. • EXPORT SALES OFFICE, 19 RECTOR ST., NEW YORK 6, N. Y.

Crail Bros. Co., Long Beach, California, using a Moto-Crane with **two Waukesha Engines**—(powering the boom) a **140-GK Gasoline,** six-cyl., 4½-in. x 5½-in., 525 cu. in., 160 max. hp. at 2250 rpm; and (powering the chassis) a **145-GKB Gasoline,** six-cyl., 5¼-in. x 6-in., 779 cu. in., 240 max. hp. at 2400 rpm. Being spotted is a 22-ton Gardner-Denver mud pump with **two WAKU Waukesha** LP or natural gas units, six-cyl., 6¼-in. x 6½-in., 1197 cu. in.; each 213 continuous hp. at 1300 rpm.

EVERYWHERE in the industrial picture

WAUKESHA ENGINES

Multi-Unit Waukesha Horsepower—this MC-524 Lorain has it! So does this Gardner-Denver mud pump that's being spotted in the Long Beach outer harbor area. Two Waukeshas give the Moto-Crane safe, sure, steady power, with a ready reserve for heavy handling. Fast, flexible power, too, for speedy movability and reliable road travel. And the mud pump with its Waukeshas is powered to remove about 700 gal. of heavy oil mud per minute in oil well deep drilling jobs. Send for Bulletins.

286

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.

NEW YORK • TULSA • LOS ANGELES

neers' flood control and navigation improvements within the lower Mississippi Valley Division, extending from Missouri down to the Gulf of Mexico.

A West Point graduate with a master's degree in civil engineering from Massachusetts Institute of Technology, Col. Barschdorf has served as staff officer on the Army General Staff and as chief of the Military Mission to Bolivia. He was commander of the 182nd Engineer Combat Battalion with the Fifth Army in Italy during World War II, and recently attended the Army War College.

Men and Jobs Briefs . . .

• **Corps of Engineers—Silas R. Overholser,** resident engineer for Lookout Point Dam on Oregon's Willamette River, takes a year's leave of absence to join Tudor Engineering Co., San Francisco, as resident engineer on the Tri-Dam project located near Sonora, Calif.

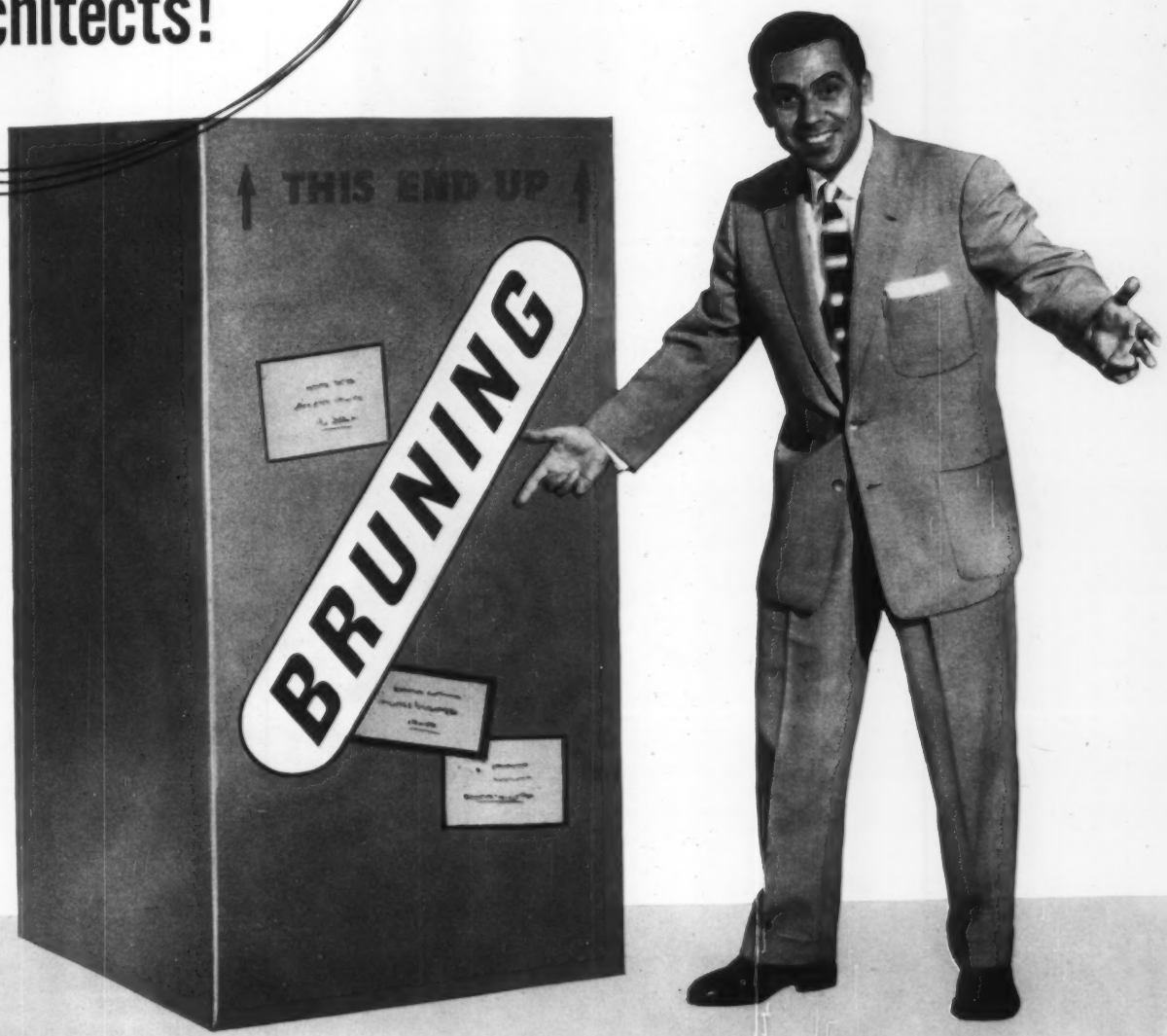
• **Associations**—The Building Research Institute elects **Edmund Claxton,** research director of Armstrong Cork Co., as president and **William Muirhead,** president of Muirhead Construction Co., Durham, N. C., as vice president . . . **William E. Dickinson,** highway and concrete engineer, is appointed chief engineer for Calcium Chloride Institute.

• **Business—Mauno Backlond** withdraws the partnership of Wilbur Watson Associates, consulting engineers in Cleveland, Ohio . . . **John Brumbaugh** establishes his own civil engineering firm, known as John Brumbaugh and Associates, in Mahwah, N. J. . . . **R. Laymon Mays,** who joined the engineering department of Nickel Plate Road in 1928, is named assistant chief engineer of the railroad with headquarters in Cleveland.

• **Careers—Kenneth M. Lloyd,** Youngstown, Ohio, is appointed a member of the Ohio River Valley Sanitation Commission . . . In Wilson, N. C., **N. Jack Maynard** is named city manager to succeed **S. Talmadge Green** . . . **Clayton B. Dekle,** an architect with the Tennessee Department of Conservation, is transferred to Tennessee's new state building commission.

• **Retirements—Ivan E. Oakes,** secretary of Oregon's Willamette River Basin Commission since 1945, officially retires from state service, but will continue as a member of the commission without remuneration.

Draftsmen!
Engineers!
Architects!



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COPYFLEX SENSITIZED MATERIALS

Bruning offers an unrivalled selection of sensitized papers, cloths, and films, available in a variety of sizes and weights, in sheet or roll form. Papers come in white and five tints.

COPYFLEX REPRODUCTION MACHINES

Copyflex offers all the benefits of diazo black-on-white reproduction — speed, economy, quality prints—plus problem-free installation and operation. No fumes, no exhaust ducts. There's a model to meet every need.

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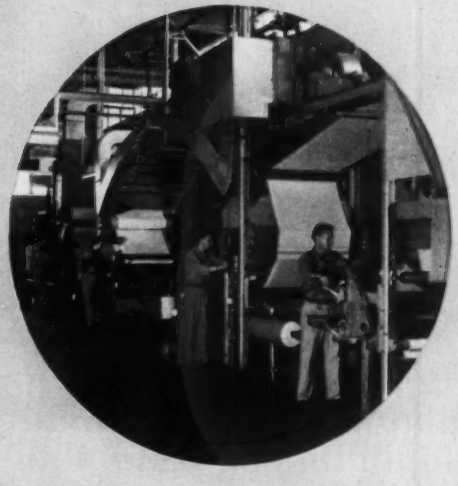
—From Bruning Research and Engineering

It was Bruning Research and Engineering that introduced the first pencil tracing cloths, the first fume-free whiteprinters in America, the first band-type drafting machines. Today, with the most complete facilities for Research in its field, Bruning has just made available to you the newest and most advanced sensitized materials, tracing papers and cloths. It has just "engineered" for you the most modern reproduction machine of them all.



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From Bruning Manufacturing

In its own modern paper converting plants at Teterboro, N. J., Chicago, Kansas City, and Los Angeles, Bruning controls quality all the way to bring you tracing mediums and sensitized materials of dependable, consistent high quality. The famous Copyflex reproduction machines are entirely Bruning manufactured to provide you the finest in reproduction performance.

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Bruning Gives You a Complete Product Service Backed by Research, Engineering, and Manufacturing . . . Simplifies Ordering . . . Assures Efficient Integration of Companion Products.

Look into this Big Package from Bruning. You'll discover why draftsmen, engineers, and architects everywhere look to Bruning as their *Single, Convenient, Dependable Source* for everything they need in top-quality drafting room supplies and service.

You'll find why Bruning as researcher, manufacturer, and supplier can bring you better results at lower cost, make your job easier. Take a close look at the complete line of products brought to you by Bruning. There's one to suit your every need, to fit any budget. You simplify ordering and stocking, save time and money.

Moreover, companion products, like Copyflex reproduction machines and Copyflex sensitized materials, are made to work together to give you premium results.

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These new, improved drawing mediums set a new high standard in translucency, pencil-and-ink-taking qualities and permanence. Select from a complete variety.

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Bruning's wide selection includes not only standard items, but such special aids as dotting pens, proportional dividers, planimeters and Wrico lettering sets.

ERASING MACHINES

These easy-to-use machines do a better job of erasing, save time. An extra-long, seven-inch eraser prevents "fly-out". They are quiet, cool, vibration-free tools ideal for all departments.

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Choose from a range of models and prices. Patented "Equipoise" gravity compensator, exclusive Touch Control Indexing provide unrivalled simplicity, precision, and ease of operation.

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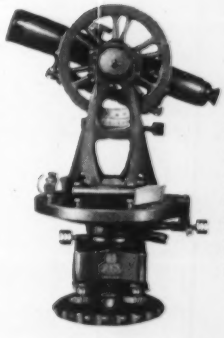
Everything for the drafting room, in a range of materials and styles to meet every price requirement—including famous Hamilton Auto-Shift drafting tables and UnitSystem files.



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This complete line features famous Brunson precision surveying instruments with exclusive dust-proof ball bearing construction for lasting accuracy, minimum maintenance, ease of operation.

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To Help You Get Better Results And Make Your Job Easier, Bruning's Big Package Brings . . .

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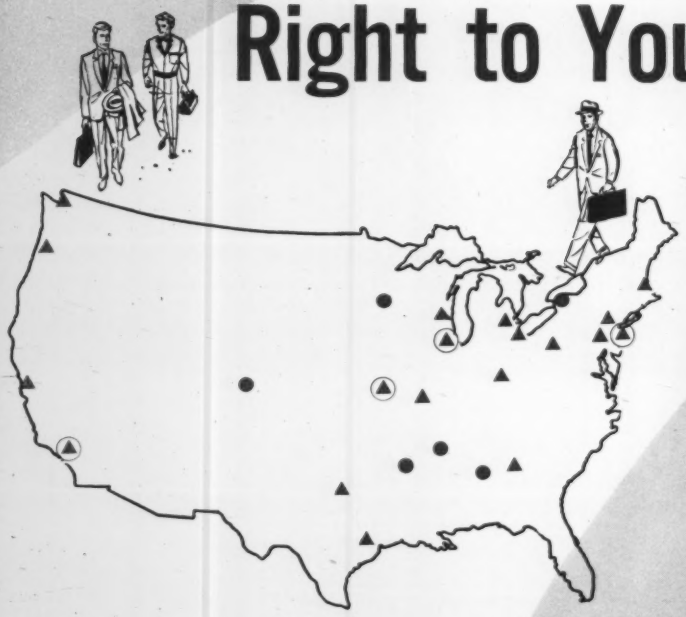

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No Time Lost for Lack of Service!

You'll find a Bruning branch practically right in your own backyard. It's headquarters for a capable staff of Bruning sales-service specialists, who are always available to you. Whether your need concerns machine service, product application, or any problem relative to the operation of your department, your Bruning specialist will be right on the spot to give you help when you need it.

No Delays Suffered for Lack of Supply!

Your nearby Bruning Branch or distributor carries a full line of Bruning products, is staffed and equipped to give you fast, efficient supply. You run no risk of costly delays for lack of products or materials.

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MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
September Materials, and Labor Prices, will appear in September 8, 1955 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4; aver. 50 c.y., del.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	
Atlanta	$3.97a	$3.56a	$3.40	$2.75	$2.75	$2.50†	$2.14	$2.24	$1.45	$1.65	$0.18	$0.195	$12.25g
Baltimore	4.16a	3.75a	3.63	2.60†a	2.60†a	2.00†a	2.75†a	2.80†a	2.65†a	2.60†a	.18	.18a	12.15
Birmingham	3.72	2.75a	....	2.53a	2.53a	2.08a	2.75	2.75	1.35	1.55	.165	.165	11.00
Boston	4.47b	4.11b	4.06	3.00a	3.00a	3.00a	1.60a	1.75a	....	....	.23	.265a	13.00h
Chicago	3.73a	3.32a	3.35	3.60†b	3.60†b	3.75†b	3.50†b	3.50†b	2.25†	2.25†	.23	.23b	12.50
Cincinnati	3.95c	3.55c	3.73	2.19†c	2.24†c	2.24†c	2.54†c	2.54†c	....	....	.18	.225a	11.60
Cleveland	N. A. in C. L.	3.34e	....	2.05f	1.85f	1.65	4.10†a	4.10†a	3.35†	3.15†	.....	.22	15.45
Dallas	3.15a	2.85a	2.93	2.18	2.28	1.84	2.22	2.38	.....	.....	.11i	.267j	9.40
Denver	4.44a	3.94a	4.44	1.85	2.00	1.20	....	....	....	....	.23	.255a	10.50
Detroit	3.89a	3.30a	3.54	4.50†b	4.50†b	4.00†b	3.75†	3.75†	4.25†	4.25†	.21	.24a	12.80
Kansas City	4.10b	3.90b	3.90	1.65	1.65	2.00†a	2.00†a	2.00†a	.....	.....	.20a	.24c	12.75b
Los Angeles	4.92ch	4.46ch	5.40	2.31a	2.51a	2.31a	2.16a	2.31a	.....	.....	.135/m	.245m	12.37ih
Minneapolis	4.20a	3.79a	3.71	2.70†ag	2.70†ag	1.60†ag	3.25†ag	3.25†ag	.....	.....	.19i	.....	12.75f
Montreal	3.11d	2.86d	....	2.20e	2.20e	2.25e	1.90i	2.20i	.....	.....	.17	.17a	10.80ek
New Orleans	3.50a	3.20a	3.48	2.44	2.44	2.00	....	....	1.45	1.65	.275	.....	12.90
New York	4.26a	3.85a	3.63	3.05bk*	3.05bk*	2.00bk**	2.70bl	2.70bl	.....	.....	.....	.....	14.65an
Philadelphia	3.73/4.12†a	3.42/3.79†a	3.58/3.63†	2.85†*p	2.85†*p	2.35†*p	2.45†	2.55†	2.00	2.35	.22/.26	.....	13.20dv
Pittsburgh	3.75a	3.56a	3.75	2.40†	2.40†	2.20†	2.60†	2.60†	2.15	2.15	.25d	.31	14.00
St. Louis	3.70/3.93c	3.25/3.51c	3.55/3.72	3.25am	3.00am	2.40/3.00am	1.60j	1.70j	1.50	1.50	.22	.28ei	12.90
San Francisco	3.83c	3.39c	....	2.07	2.07	2.17	2.22	2.22	.....	.....	.....	.28el	12.15e
Seattle	4.80a	3.55a	5.95h	3.50†bm	3.50†bm	3.50†bm	4.00†bm	4.00†bm	.....	.....	.226i	.351j	12.30f
Toronto	4.00	3.77	4.00	2.25	2.25	1.85	2.00	2.00	2.00	2.00	.25	.35c	14.95

† Delivered. * Prices incl. dealers discount except as noted.

CEMENT: *a Less 10¢ disc, 15 days. *b Less 2% disc, 15 days. *c Less 10¢ disc, 10 days. *d Truckload lots, deliv. 10¢ disc, 20 days. *e Truckload lots, destination price. *h LCL.

SAND GRAVEL, STONE & SLAG: *a Truck lots. *b Per cu. yd. *c 5 tons or more. *e ½". *f Pea gravel. *g Less 5% for cash. *h Less than 5 tons. *i Sales tax incl. *j F.o.b. quarry. *k Barge lots asd. *l F.o.b. scow Hudson river. *m Less 2% for cash. *n F.o.b. cars. *o 1-3 mi zone. *p Add 10¢ for ea. add'l mi zone.

CONCRETE BLOCK: *a Cinder *b Waylite. *c Haydite. *d Celocrete *e 8¼ x 8 x 12 in. *f 8 x 4 x 16. *g F.o.b. truck at job. *i Less 2% for cash *l F.o.b. plant San Rafael. *m F.o.b. yard.

READY MIXED CONCRETE: *a 5 cu. yds. or over del. Man. *b 25 cu. yds or more. *c 10-100 cy. brackets. *d 1-3 mi. zone. *e 2,000 lb comp. *f 2,500 lb. comp. *g Less 25¢ disc, 15 days. *h Less 50¢ for cash. *i 5% off for cash. *j 2% off for cash. *k Federal tax included. Add 5% mun. & prov. *l 1:2½:3. *m F.o.b. yard. *n Plus escalator clause. *o Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 40¢ per bbl., not refundable.

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn.	$2.90†	Buffington, Ind.	$2.85†	Steelton, Minn.	$2.95†	Muskegon, Mich.	$3.00†	Toledo, O.	$2.90†
Clinchfield, Ga.	2.90†	Independence, Kan.	2.80†	Leeds, Ala.	2.75†	Saginaw, Mich.	3.00†	Milwaukee, Wis.	3.05†
Kingsport, Tenn.	2.90†	Hannibal, Mo.	2.85†	Duluth, Minn.	2.95†	Wyandotte, Mich.	3.00†	Green Bay, Wis.	3.05†
West Des Moines, Iowa	2.95†	Northampton, Pa.	2.90†	Hudson, N. Y.	2.75†	Buffalo, N. Y.	3.00†	Ironton, O.	2.90†
Nazareth, Pa.	2.90†	Universal, Pa.	2.95†	Alpena, Mich.	2.90†	Oswego, N. Y.	3.15†	Montreal City	3.58
Bath, Pa.	2.90†	Waco, Tex. (+ 10¢ tax)	2.85†	Detroit, Mich.	3.00†	Cleveland, O.	2.95†	W. Winfield, Pa.	3.00†

† *Prices to hold for third quarter of* 1955.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80-300 penetration		CUTBACK ASPHALT MC Per ton		ROAD OIL Per gal.	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 10-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	.....	.....	.....	$26.00	$33.25	$0.115	$0.23	$0.125*w	$0.27*w	$0.15	$0.15	$0.25
Baltimore	150.00†	75.00†	.....	21.00i	.....	.085i	0.175i	.09iw*	.18iw*	.09i	.095i	0.185i
Birmingham	.....	87.50i	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	22.00a	23.00a	22.00av	22.00av	.09*f	.....	.10a	.145aG	.22aG
Chicago	155.00†	85.00†b	3.50/3.55†f	19.85b	29.85b	18.85bv	28.85bv	.094bw*	.1740bw*	.0725b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	200.00	73.00d	5.03g	23.00A	.....	23.00i	.....	.1025*wf	.....	.....	.1025A*	.18AG
Dallas	e	40.00	e	24.05	43.09	.1016	.2103	28.91	50.44	.098i	.1087	.1960
Denver	.....	50.00†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	104.00	.....	27.21	.....	27.21v	.....	.1188w*	.....	.0966	.....	.211
Kansas City	e	e	e	15.00cl	.....	17.50*	.....	.07*nj	.....	.085c	0.11	.....
Los Angeles	e	.....	e	16.00dmz	.....	16.00dvz	.....	18.00dz*	.....	17.00dv	.0825f	.1725f
Minneapolis	.....	.....	2.97h	25.00	.....	25.00	.....	0.105w	.....	0.095	.1015	.....
Montreal	e	e	e	27.00n	39.60n	.135n	.198n	16.50nw*	20.90nw*	.132n	.197ns	.289ns
New Orleans	.....	.....	.....	17.50av	....o	17.50av	....o	.085xw	....o	.085p	.085pL	.....
New York	.....	.....	2.85f	23.89qCD	44.32qD	22.89wtCD	43.57wtD	.1023*CDf	.1889wDf	.....	.1023CD	.1918p
Philadelphia	175.00	110.00	4.06	22.00	.....	.....	.....	.09uf	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	38.00	.10	.21	27.00*	40.00*	.098	.11	.224
St. Louis	.....	.....	.....	18.76f	.....	.1704	.....	.0863w*	.....	0.1575	.10	.....
San Francisco	.....	67.50e	.....	17.50gv	33.00gp	17.50gkv	33.00gkv	20.00g*	37.50g*	18.75v	.085y	.....
Seattle	.....	.....	.....	17.50h	38.00h	17.25hv	.....	24.50K	.....	19.75hv	.085h	.095v
Toronto	.....	.....	4.03	23.80	46.67	0.19	0.24	0.20w	0.25w	0.17	0.20	.24

h Delivered.

PAVING BRICK & BLOCK: *a CL. *b 3 x 4 x 8. *c 2¼ x 8¼ x 4. *d LCL, truck deliveries. *e Not used. *f 2" interior 6# treat. *g 3" *h 2" tr, 8# *i 3 x 3⅝ x 8½. *j 2½", 6 lb. tr.

ASPHALTS: *a Price at plant, Everett, Mass. *b F.o.b. refinery, Lockport, Ill. *c F.o.b. Sugar Creek, Mo. *d F.o.b. refinery, El Segunda. *e F.o.b. Baton Rouge. *f F.o.b. Wood River or Roxana, Ill. *g F.o.b. Richmond, Calif. *h F.o.b. Martinez. *i F.o.b. refinery, Baltimore. *j F.o.b. refinery, Inglewood, Calif. *k 50-110 penetr. *l Less than 100 penetr. *m 40/80 penetr. *n Tax incl. *o Drums not avail. Shipped in steel bbl. *q 40/85 penetr. *r In customer's drums. *s Shipped in drums, per drum *t 85/200 penetr. *u Per 100 gal. *v Per ton. *w Per gal. *x Also tank trucks *y F.o.b. Oakland. *A F.o.b. refinery. Cleveland. *B F.o.b. Destrehan, La. *C Bulk *D Prices based on transporting to Manhattan via truck. *E RC. *F Also RC. *G Also MS, SS. *H RC 0-5 incl. *I MC 4. *J MC, RC .0675. *K MC 3, 4 & 5. *L MS. *M MC 1-5, RC 1-5, .089. *N MC 3. *P F.o.b. refinery Savannah: $0.09/gal., tank cars; $0.20/gal., drums.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$4.60	$4.50	$4.65	$9.25	....	$94.50	$113.00	$5.825	$7.90	$5.625	....
Chicago Area	4.60	4.50	4.65	9.25	$5.045	94.50	113.00	5.825	7.90	5.625	....
Pittsburgh Area	4.60	4.50	4.65	9.25	5.045	94.50	113.00	5.825	7.90	5.625	$11.50
Buffalo Area	4.60	4.50	4.65	9.25	5.045	94.50	113.00	5.825	7.90	5.625	11.50
Cleveland	....	....	4.65	9.25	5.045	.....	.....	....	....	....	11.50
Youngstown Area	....	....	4.65	....	....	.....	.....	....	7.90	....	....
Geneva	4.60	4.50	....	....	....	.....	.....	....	....	....	....
Los Angeles	....	....	....	....	5.045	.....	.....	....	7.90	....	....
Pueblo	4.90	5.35	5.10	....	....	.....	95.00	5.825	7.90	5.625	12.40

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq. ft., carload lots fob mill
Atlanta	$7.63	$7.42	$7.42	$38.00‡	$42.00‡	
Baltimore	7.63	7.06j	....	42.00	45.00	
Birmingham	7.40	7.20t	7.20t	51.00y	57.00y	
Boston	8.13a	7.82	7.82	42.00	46.00	
Chicago	7.28	6.23gu	6.23gu	46.00‡	56.00‡	
Cincinnati	7.75ah	7.06rv	....	42.50mm	50.00mm	
Cleveland	7.91	6.41c	....	41.00‡	45.50‡	
Dallas	9.05	7.25	7.25	49.00	53.00	
Denver	8.75	7.80c	....	48.00y	53.00mm	
Detroit	8.00	7.31w	....	50.50	60.50	
Kansas City	7.95a	7.75	....	48.00	51.50	
Los Angeles	8.15fd	7.60	....	52.00	58.00	
Minneapolis	7.64d	8.06b	8.06b	42.50	47.00	
Montreal	7.50–8.00ic/8.50–9.20ia	6.65i	6.65i	46.00ia	51.00ia	
New Orleans	....	6.20akz	....	66.00	60.00	
New York	7.77	7.35yaa	7.35yaa	42.00mm	48.00mm	
Philadelphia	7/7.15	7.30/7.45	....	38.00‡	42.00‡	
Pittsburgh	6.98	7.37z	6.95	39.78	41.90	
St. Louis	7.68v	6.75c	6.75c	55.00l	56.00l	
San Francisco	8.00	7.30j	....	44.00	52.25	
Seattle	5.35e	7.00cj	....	53.50mr	59.50mr	
Toronto	8.00ie	6.55	6.55	53.50n	66.50n	

Quantity extras, per cwt: under 100f, +$6; 100–399f, +$3; 400–999f, +1.25; 1000–1999f, +30¢; 2000–4999f, base price; 5000–9999f, −10¢; 10,000–19,999f, −30¢; 20,000–29,999f, −50¢; 30,000f and up, −70¢

EXTRAS, per cwt—*Quantity: less than 700f, +50¢; 700–1499f, +25¢; 1500–7999f, +10¢; *Sizes: f2 +$2.20; f3 +$1.10; f4 +80¢; f5 +62.5¢; f6, f7 +45¢; f8, f9, f10 +30¢; *Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job) *Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–500 tons, +60¢; +50¢ but not over $4500; 20–200 tons, +70¢ but not over $2000; 5–20 tons, +85¢ but not over $70 *Design only: +60¢

‡ Delivered *a 2000–9999f *b 10,000–15,999f, fob city *c 20 tons or over *d 10,000–19,999f *e fob plant *f incl. delivering in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p del. of 500 sq. yd. or more. *r 2% off for cash *s 2,000–4,999f *t add 15¢ del. *u add 6.25¢ switch *v incl 15¢ del. *x add 5¢ switch *y add 30¢ del. *z add 10¢ del. *aa Prices beginning Aug. 1 based on Morrisville, Pa.; previously based on Sparrow Pt., Md. Decrease in freight costs due to switch in mill base offset mill price rise in July '54. *A American made. *C Canadian made. † Number system replaces inch system of classifying bar sizes. New system is based on number of eighth inches in diameter of bar. ** Aver. of Canadian & American.

WELDED FABRIC REINFORCING: 4 × 10 in., No. 6 & 10 wire—Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.40; 4 × 12 in., No. 6 & 12 wire—Joliet, Ill., Donora, Pa., Monessen, Pa.....$2.20; 8 × 8 in., No. 6 & 6 wire—Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.57

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEX	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	ASBESTOS CEMENT PIPE 12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	24 in.
Atlanta	$109.6	$1.52	$2.53	$ .545	$1.37	$4.82	$12.925	.....	.....	$0.90m	$3.40m
Baltimore	117.9	1.52	2.53	.574	1.07	4.455s	11.7875	$178.20	$274.80	.99	2.70
Birmingham	104.3	1.52	2.53	.42	.75	3.30r	10.50r	260.00‡	400.00‡	1.25m	2.75m
Boston	120.5	1.54	2.32	.609qrt	1.1745qrt	4.815qrt	12.505qrt	187.80r	289.20r	1.54mq	3.65mq
Chicago	121.0	1.52	2.32	.77m	1.48m	6.25m	19.00m	150.00‡	270.00‡	.80	2.80
Cincinnati	114.5	1.54	2.40	.644t	1.242t	4.77t	12.1975t	240.00	370.00	.80m	2.95m
Cleveland	121.8	1.54	2.40	.546r	1.053s	4.32t	11.48	158.00m	245.65m	.85m	3.25m
Dallas	120.7	1.54	2.66	.439	.799	4.00b	9.17b	.....	.....	.49	1.60
Denver	126.4	1.62	2.66	.45n	.78n	3.48n	....	.....	.....	.74m	2.80m
Detroit	121.8	1.54	2.40	.80	1.50	5.95	16.40	230.00m	350.00m	.95	3.83
Kansas City	119.7	1.54	2.40	.56	1.00	4.13	11.20	250.00	480.00	.90	3.25y
Los Angeles	126.1	1.62	2.32	.671	1.461	5.971	14.801	228.20l	348.90l	.95	2.75l
Minneapolis	126.0	1.57	2.53	.76mo	1.38mo	5.70mo	....	.....	.....	1.66h	4.05h
Montreal	.....	.....	....	1.07u	1.78u	5.52u	8.95u	.....	.....	1.17h	3.11j
New Orleans	112.5	1.52	2.53	.51	.925	4.91	....	280.00p	460.00p	.65	2.29
New York	116.5	1.54	2.32	.75	1.45	5.63	14.85	.....	.....	1.15	3.00
Philadelphia	115.9	1.52	2.32	65	1.25	4.95r	12.65r	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	122.5	1.54	2.32	468m	.864m	3.86m	9.78m	182.00	244.00	1.05h	2.50h
St. Louis	115.5	1.52	2.40	56	1.08	4.22	9.80	180.00l	380.00l	1.20l	2.70l
San Francisco	126.1	1.62	2.32	74d	1.62d	6.59d	16.47d	235.00l	392.00l	1.05m	3.30m
Seattle	126.1	1.62	2.32	81b	.91b	....	....	150.00z	.....	.90h	2.85h
Toronto	....	....	....	.76	1.425	5.70	....	157.00	280.00	.87	3.05

WROUGHT STEEL PIPE

(Full standard weight)

Discount from list; see footnotes

	3½ to 6 in. Butt Weld‡	3½ to 6 in. Lap Weld‡	8 in. & 8 in. Butt Weld‡	8 in. & 8 in. Lap Weld‡	Mill
	Galv.	Galv.	Galv.	Galv.	
	SS	SS	SS	SS	
Atlanta	....	4.25s	....	....	
Baltimore	+4.25	+0.25t	....	....	
Birmingham	....	....	....	....	
Boston	....	18.50s	14.25	10.75	
Chicago	17.50t	17.50s	14.25	10.75	
Cincinnati	17.50ab	+0.25s	9.75	+0.75b	
Cleveland	....	....	....	....	
Dallas	....	16.50s	14.25	10.75	
Denver	....	+1.25s	14.25	10.75	
Detroit	....	....	....	....	
Kansas City	....	17.50t	14.25	10.75	
Los Angeles	....	3.25td	9.75	+10.75ab	
Minneapolis	....	....	....	....	
Montreal	....	....	....	....	
New Orleans	....	....	....	....	
New York	....	....	....	....	
Philadelphia	....	....	....	....	
Pittsburgh	....	....	....	....	
St. Louis	....	....	....	....	
San Francisco	....	....	....	....	
Seattle	....	....	....	....	
Toronto	....	....	....	....	

	3½ & 4 in. Butt Weld‡	3½ & 4 in. Lap Weld‡	5 & 6 in. Butt Weld‡	5 & 6 in. Lap Weld‡	Mill
	Black	Black	Galv.	Galv.	
	SS	SS	SS	SS	
Atlanta	28.00	28.00	10.75	10.75	
Baltimore	28.00	28.00	10.75	10.75	
Birmingham	28.00	28.00	9.75	14.25	
Boston	28.00b	28.00b	....	16.50s	
Chicago	28.00	28.00	10.75	17.50t	
Cincinnati	27.00	16.50b	....	7.00ab+10.75ab	
Cleveland	....	....	....	....	
Dallas	....	....	....	....	
Denver	....	....	....	....	
Detroit	....	....	....	....	
Kansas City	....	....	....	....	
Los Angeles	....	....	....	....	
Minneapolis	....	....	....	....	
Montreal	....	....	....	....	
New Orleans	....	....	....	....	
New York	....	....	....	....	
Philadelphia	....	....	....	....	
Pittsburgh	....	....	....	....	
St. Louis	....	....	....	....	
San Francisco	....	....	....	....	
Seattle	....	....	....	....	
Toronto	....	....	....	....	

	8 in. & 10 in. Butt Weld‡	8 in. & 10 in. Lap Weld‡	12 in. Butt Weld‡	12 in. Lap Weld‡	Mill
	Galv.	Galv.	Galv.	Galv.	
	SS	SS	SS	SS	
Atlanta	....	....	....	....	
Baltimore	....	....	....	....	
Birmingham	....	....	....	....	
Boston	....	....	....	....	
Chicago	....	....	....	....	
Cincinnati	....	....	....	....	
Cleveland	....	....	....	....	
Dallas	....	....	....	....	
Denver	....	....	....	....	
Detroit	....	....	....	....	
Kansas City	....	....	....	....	
Los Angeles	....	....	....	....	
Minneapolis	....	....	....	....	
Montreal	....	....	....	....	
New Orleans	....	....	....	....	
New York	....	....	....	....	
Philadelphia	....	....	....	....	
Pittsburgh	....	....	....	....	
St. Louis	....	....	....	....	
San Francisco	....	....	....	....	
Seattle	....	....	....	....	
Toronto	....	....	....	....	

	8 in. & 10 in. Butt Weld‡	8 in. & 10 in. Lap Weld‡	12 in. Butt Weld‡	12 in. Lap Weld‡	Mill
	Black	Black	Galv.	Galv.	
	SS	SS	SS	SS	
Atlanta	28.00	28.00	10.75	10.75	
Baltimore	28.00	28.00	10.75	10.75	
Birmingham	28.00	28.00	9.75	14.25	
Boston	28.00b	28.00b	....	16.50s	
Chicago	28.00	28.00	10.75	17.50t	
Cincinnati	27.00	16.50b	....	7.00ab+10.75ab	
Cleveland	....	....	....	....	
Dallas	....	....	....	....	
Denver	....	....	....	....	
Detroit	....	....	....	....	
Kansas City	....	....	....	....	
Los Angeles	....	....	....	....	
Minneapolis	....	....	....	....	
Montreal	....	....	....	....	
New Orleans	....	....	....	....	
New York	....	....	....	....	
Philadelphia	....	....	....	....	
Pittsburgh	....	....	....	....	
St. Louis	....	....	....	....	
San Francisco	....	....	....	....	
Seattle	....	....	....	....	
Toronto	....	....	....	....	

	14 in. & 16 in. Butt Weld‡	14 in. & 16 in. Lap Weld‡	Mill
	Galv.	Galv.	
	SS	SS	
Atlanta	....	....	
Baltimore	....	....	
Birmingham	....	....	
Boston	....	....	
Chicago	....	....	
Cincinnati	....	....	
Cleveland	....	....	
Dallas	....	....	
Denver	....	....	
Detroit	....	....	
Kansas City	....	....	
Los Angeles	....	....	
Minneapolis	....	....	
Montreal	....	....	
New Orleans	....	....	
New York	....	....	
Philadelphia	....	....	
Pittsburgh	....	....	
St. Louis	....	....	
San Francisco	....	....	
Seattle	....	....	
Toronto	....	....	

	14 in. & 16 in. Butt Weld‡	14 in. & 16 in. Lap Weld‡	Mill
	Black	Black	
	SS	SS	
Atlanta	28.00	28.00	
Baltimore	28.00	28.00	
Birmingham	27.00	16.50b	
Boston	28.00b	28.00b	
Chicago	28.00	28.00	
Cincinnati	27.00	16.50b	
Cleveland	....	....	
Dallas	....	....	
Denver	....	....	
Detroit	....	....	
Kansas City	....	....	
Los Angeles	....	....	
Minneapolis	....	....	
Montreal	....	....	
New Orleans	....	....	
New York	....	....	
Philadelphia	....	....	
Pittsburgh	....	....	
St. Louis	....	....	
San Francisco	....	....	
Seattle	....	....	
Toronto	....	....	

Mill: Lorain, Ohio; Aliquippa, Pa.; Sparrows Pt., Md.; Benwood, W. Va.; Youngstown, O.; Indiana Harbor, Ind.; Sharon, Pa.; Wheatland, Pa.; Erie, Pa.; Fontana, Calif.

‡ Threaded and coupled. a 3½ to 6 in. b Continuous weld. c 8 and 6 in. d 6 in.

** Delivered. *a BEGINNING THIS MONTH PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 104.3; Burlington, N. J., 113.1. Historical record for 20 cities January 1950 to date will be published in 1955 Cost Issue of ENR, Sept. 29, 1955. *b Extra strength ASTM C 200–44T *c 4-in., $90 *d SS361-A *e 30-in. *f 21 in. *g culvert pipe; reinforced, ASTM C 76–41 *h reinforced, ASTM C 75–41 *i reinforced, ASTM C 76–37 *j centrispun; no standard specs. in Canada *k 2% off for cash *l fob plant *m truck delivery *n LCL delivered, fob truck *o listed price based on LCL (no min.) *p freight allowed to destination in city *q ASTM C 13–40 *r CL fob origin, freight allowed *s 2 ft lengths *t 3 ft lengths *u CESA A 60–1941 specs. used *v standard strength *y ea; add 20% for d.s.

* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. ("based on approx. $200 per net ton): Butt Weld ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following „discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 50.25, galv., + 78.50; 1¼ in. black, + 50.25, galv. + 78.0, 1½ in. black, + 46.75 galv. + 74.25; Lap Weld —2½ in. to 3 in. black + 52.50 galv. + 78.50; 4½ in. to 6 in. black + 49.50 galv. + 73.75 Add freight rates plus 3% transportation tax to get destination price.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

	SHORT LEAF YELLOW PINE AND DOUGLAS FIR — All S.L.Y.P. is No. 2 common or better and for No. 1 N.C. Box. (Prices in Bold Face) All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)									LONG LEAF Y.P. Merchantable grade up to 20 ft.		PLYWOOD Rail freight increment (See note for base price)	
	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	2x12 Rgh	12x12 Rgh	¾"	¾"
Atlanta †	$78.00	$80.00	$73.50	$74.00	$77.50	$81.00	$79.00	.....	.....			$22.32	$27.24
Baltimore *	90.00	95.00	92.00	92.00	93.00	100.00	110.00	.....	.....	$170.00	$185.00	25.92	31.60
	131.00g	*131.00g*	*131.00g*	*131.00g*	*131.00g*	*131.00g*	*134.00g*	*$145.00*	*$145.00*			.....	.....
Birmingham †	81.50	83.50	80.50	87.50	90.50	95.50	100.50	.....	.....	120.50	165.50	21.78	26.58
	105.00	*105.00*	*108.50*	*108.50*	*108.50*	*105.00*	*105.00*	*105.00*	*105.00*	.....	.....	.....	.....
Boston *	102/110a	111/118a	107/124a	104/121a	104/121a	104/121a	.....	.....	.....	.....	.....	25.92	31.60
‡	*91.00n*	*91.00n*	*107/124*	*104/121*	*104/121*	*104/121*	*121.00*	*125.00*	*125.00*	.....	.....	.....	.....
Chicago **	99.00	102.00	95.00	110.00	118.00	119.00	114.00	.....	.....	142.00	142.00	22.45	27.37
	106.00	*106.00*	*118.00*	*117.00*	*117.00*	*118.00*	*125.00*	*125.00*	*125.00*	.....	.....	.....	.....
Cincinnati *	93.75	94.75	83.00	90.50	94.75	103.00	110.50	.....	.....	131.75	131.75	25.00	30.48
	100.75	*103.00*	*112.50*	*109.00*	*111.25*	*111.50*	*136.75*	*136.75*	*136.75*	.....	.....	.....	.....
Cleveland **	96.00	98.00	103.00	102.00	102.00	103.00	.....	.....	.....	.....	.....	25.37	30.93
	.....	.....	*118.00*	*117.00*	*117.00*	*118.00*	*123.00*	*123.00*	*123.00*	.....	.....	.....	.....
Dallas ††	72.00	78.00	68.50	68.50	73.50	65.50	130.00	.....	.....	127.50	134.50	18.72	22.80
Denver *	Not in stock		*121.50*	*122.50*	*122.50*	*122.50*	*125.00*	*137.75*	*140.50*	.....	.....	13.92	16.98
Detroit ‡	115.00	118.00	108.00	115.00	118.00	118.00	.....	.....	.....	.....	.....	25.00	30.48
	125.00	*125.00*	*134.00*	*130.00*	*130.00*	*130.00*	*175.00*	*175.00*	*165.00*	.....	.....	.....	.....
Kansas City *	125.00	125.00	120.00	125.00	130.00	*140.00*	.....	.....	.....	.....	.....	16.56	20.16
	130.00	*130.00*	*125.00*	*134.00*	*134.00*	*135.00*	*155.00*	*175.00*	*200.00*	.....	.....	.....	.....
Los Angeles ‡	*107.00*	*107.00*	*107.00*	*107.00*	*107.00*	*107.00*	*180.00*	*130.00*	*120.00*	.....	.....	16.61ab	20.25ab
Minneapolis #	*155.00*	*155.00*	*140.00*	*140.00*	*140.00*	*140.00*	*175.00*	*175.00*	*175.00*	.....	.....	19.89	24.25
Montreal ab	92.00	100.00	92.00	92.00	110.00	125.00	.....	.....	.....	105.00	105.00	.....	.....
	155.00	*155.00*	*155.00*	*155.00*	*155.00*	*155.00*	*130.00*	*130.00*	*130.00*	.....	.....	.....	.....
New Orleans †	100.00	100.00	92.50	85.00	90.00	94.00	118.50	.....	.....	150.00	148.00	18.72	22.80
†	*117.50*	*117.50*	*121.00*	*127.50*	*127.50*	*127.50*	*125.00*	*140.00*	*140.00*	.....	.....	.....	.....
New York ‡	112.50	115.50	125.00	127.50	127.50	127.50	167.50	.....	.....	250/270	250/270	25.92	31.60
	.....	.....	*127.50*	*127.50*	*127.50*	*127.50*	*165/175*	*170/180*	*170/180*	.....	.....	.....	.....
Philadelphia ‡	Range from $117.00 to $137.00					117/137	117/137	.....	.....	214/224	214/224	25.92	31.60
	Range from $131.00 to $163.00					*131/163*	*136/158*	*158.00*	*158.00*	.....	.....	.....	.....
Pittsburgh †	Range from $105.00 to $107.00						120.00	.....	.....	120.00	130.00	25.92	31.60
	125.00	*125.00*	*130.00*	*130.00*	*135.00*	*135.00*	*125.00*	*145.00*	*145.00*	.....	.....	.....	.....
St. Louis ‡	122.00	125.00	121.00	129.00d	134.00e	137.00e	.....	.....	.....	.....	.....	18.72	22.80
	.....	.....	*148/153i*	*148/153e*	*152/156e*	*156/159e*	*202.00e*	*192.00*	*182.00*	.....	.....	.....	.....
San Francisco A†	*80.00*	*80.00*	*90.00*	*90.00*	*90.00*	*90.00*	*107.00*	*120.00*	*145.00*	.....	.....	12.22	14.91a
Seattle †	*80.00*	*80.00*	*80.00*	*80.00*	*80.00*	*80.00*	*85.00*	*95.00*	*95.00*	.....	.....	.....	.....
Toronto a	97.00	100.00	95.00	97.00	103.00	105.00	120.00	.....	.....	110.00	.....	.....	.....
	135.00	*120.00*	*122.00*	*130.00*	*130.00*	*130.00*	*135.00*	*140.00*	*140.00*	.....	.....	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd.

LUMBER: Bold Face Type, Southern Pine. Italics, Douglas Fir. [a] Spruce. [b] Tax exempt. [c] 5M lots. [d] 8, 10, & 12 ft. lengths. [e] 8 to 16 ft. lengths. [g] No. 1 common. [i] 8 ft. lengths. [k] No. 3 common. [n] #3. A rail freight rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures.

PLYWOOD: Interior Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ⅜", $170.00; on ¾", $191.00. Exterior ⅜", $190.00, ¾", $212.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. [a] Lower rate by water shipment. [b] 50,000 lb. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS — Discounts from jobbers list, Feb. 1, 1950a, Single or Double Thickness: A quality	B quality	EXPLOSIVES — Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	79%	80%	$0.2365
Baltimore	78%d	80%d	.2365
Birmingham	82%	83%	.1840
Boston	75-10%	75-10%	.2365
Chicago	74%	74%	.2365
Cincinnati	76%	76%	.2365
Cleveland	74-10-10%	74-10-10%	.2765
Dallas	75%	75%	.2440
Denver	77%	77%	.2415
Detroit	74-10-10%	74-10-10%	.2365
Kansas City	76-10%	76-10%	.2415
Los Angeles	78%	78%	.2390
Minneapolis	73-10%	73-10%	.2415
Montreal	40-5%bc	40-10-5%b	21.35b
New Orleans	78%	79%	.2415
New York	80-2½%	80-2½%	.3075g
Philadelphia	77%	79%	.2365
Pittsburgh	78%	78%	.2090
St. Louis	80-10%	80-10%	.2415
San Francisco	61%	69%	.2365
Seattle	73%	76%	.2390

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U.S.; $1.75 per 100 lbs. higher in Canada.

Glass: [a] Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. [b] Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. [c] Single thickness. [d] Discount 6/15/52. [e] Discount eff. 12/31/54.

Explosives: * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. [g] In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. [h] F.o.b. Beloeil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.10.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.184	$0.2165	$0.2365
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.189 - .1965	.2215 - .229	.2415 - .249
Rocky Mtn. States	.189 - .2015	.2215 - .229	.2415 - .254
Pacific N. W. States	.1865 - .199	.219 - 2315	.239 - .2515
Pacific S. W. States	.184 - .1915	.2165 - .219	.2365 - .2415

PILES, TIES F.O.B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail: Pine*	By Rail: Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in. — 2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in. — 2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in. — 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in. — 3-ft. from butt	8-in.	91 to 100-ft.	....	....
14-in. — 2-ft. from butt	6-in.	50 to 69-ft.	.50/.68	....
14-in. — 2-ft. from butt	6-in.	70 to 79-ft.	.78/.83	.93
14-in. — 2-ft. from butt	8-in.	80 to 88-ft.	.83/.98	.94
14-in. — 2-ft. from butt	8-in.	85 to 89-ft.	....	1.00
14-in. — 2-ft. from butt	8-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:

		8"x8"x8' Untr.	8"x8"x8' Tr.	7"x9"x8'6" Untr.	7"x9"x8'6" Tr.
Birmingham	Hardwood, Grade 3	$1.95a	$4.00a	Gr. 5 $2.55	$4.90a
	Grade 2	1.75	3.80a	" 4 2.40	4.70a
	Grade 1	1.45	3.40a	" 3a 2.10	4.50a
Chicago	Red Oak	....	3.20a	....	4.10/4.20a
New York	S. L. Sap Pine	2.00	4.00	3.00	5.00
	Mixed Oak	2.50	4.50	3.50	5.50
Philade'phia	Red Oak	2.55	3.90	3.45	5.10
St. Louis	White Oak	2.25	....	2.75	....
	Red Oak	2.15	2.70a	2.60	3.25a
	Sap Pine or Cypress	....	2.55a	....	3.20a
San Francisco	Douglas Fir	2.25a/	3.25a/	3.37b/	5.01ca/

Tr.—Treated; Untr.—Untreated. [a] Creosoted. [b] 7"x9"x8'. [c] Empty cell. [a] Green [f] f.o.b. cars

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.095
Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton	27.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.30
Soda ash, 58%, in paper bags, per 100 lb. dense	1.70
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.85
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	10.35

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$128.65	$128.65	$256.00	$288.00	.....	.....	$25.50	$26.50	.....	.....	.....
Baltimore	202.00	216.00	404.00	458.00	594.00	679.00	36.00*k*	41.00*k*	33.00	21.50	.....
Birmingham	126.00*p*	142.00*p*	252.00*p*	284.00*p*	354.00	438.00	27.00*ff*	32.00*gg*	29.25	24.00	.....
Boston	196.00†	209.00†	392.00†	283.75†	.....	.....	36.85*p*	40.35*p*	30.00†	28.00†	.....
Chicago	135.00	145.00	280.00	.....	.....	.....	28.00	30.00	31.00	27.00	.....
Cincinnati	205.00*j*	215.00*j*	295.00*jdd*	.....	.....	.....	45.00*j*	46.00*j*	27.50*j*	27.50*j*	.....
Cleveland	187.50**	200.00**	.....	.....	.....	.....	39.75	39.75	29.75	24.75	33.50*ee*
Dallas	.....	118.00	.....	.....	.....	.....	19.75	32.25	32.00	21.80	.....
Denver	.....	.....	.....	.....	.....	.....	34.00	41.00	34.80*bb*	28.00*bb*	34.00*bb*
Detroit	130.00	138.00	259.00	.....	315.00	360.00	39.00*cc*	40.00*cc*	36.00	32.00	.....
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	29.25	29.25	32.00	27.50	28.50
Los Angeles	*r*	*r*	*r*	199.00*pw*	*r*	*r*	27.50§	.....	34.00	34.00	35.00
Minneapolis	179.00*p*	199.00*p*	410.00*p*	.....	.....	.....	40.00*p*	47.00	40.00*bbe*	30.00*bbe*	42.00*bbds*
Montreal	165.00*aq*	181.00*au*	325.00*au*	230.00	248.00*s*	.....	39.50	46.00	34.80	22.00	13.75*u*
New Orleans	170.00	170.00	310.00	380.00	.....	.....	31.00	.....	.....	28.00	28.00
New York	151.90*h*	162.00*h*	222.70*ch*	245.40*hn*	.....	.....	41.00	.....	36.00	34.00	.....
Philadelphia	156.30	166.80	312.70	375.20	.....	.....	30/34	34/40	27.60	25.60	3.17
Pittsburgh	138.00	151.00	260.00	228.00	297.00	341.00	36.00	46.00*y*	25.00	23.00	2.97*m*
St. Louis	147.00*cc*	168.50*cc*	338.25*cc*	465.00*cc*	446.00	621.50	41.50*al*	43.00*a*	.92*aa*	.75*aa*	1.25*aaspes*
San Francisco	156.85*a**	177.10*a**	235.30*ddz**	.....	.....	.....	39.50	.....	26.60	26.60	28.25
Seattle	225.00*cc*	250.00*cc*	350.00	250.00*ccw*	.....	.....	42.00*a*	54.00*a*	42.00*aAA*	37.50	3.90*mAA*
Toronto	138.70	148.90	273.75	222.00*f*	.....	.....	41.50	59.00	40.00	33.50	29.00

*† F.o.b. yard Roxbury. *a Smooth. *b Per 50 lb. bags. *c 6 x 12 x 12 in.-3 cell. *d Pulverized hot. *e 5%, 10th following month. *f 8 x 8 x 12. *g 5½ x 8 x 12. *h F.o.b. trucks, job site N.Y.C. *i Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 180 lb. *n 7⅝ x 7⅝ x 12. Speed title. *p Truck lots. *q Provincial and Municipal tax extra. *r Not used because of earthquake danger. *s 2% discount for cash. *t 5½ x 8 x 11¼. *u Tax exempt. *v Sand lime. *w 5 x 8 x 12. *y Stacked. *z Pebble lime price per 80 lb. sack. *aa Price per sack. Lime not sold per ton. *bb LCL. *cc Truck delivery. *dd 6 x 12 x 12. *ee Pebble lime. *ff 80% common. *gg Select. *hh Icl. § F.o.b. yard. *** Warehouse delivery. ** F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry *a*	WHITE LEAD Per 100 lb. in 100 lb. cases In oil *w*	READY-MIXED PAINT Per gal., drums Graphite *b*	Aluminum *c*	Ferric Oxide *d*	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 380 lb. bbl. per ton
Atlanta	$17.75	$28.275	$3.26	$3.51	$3.01	$3.10	$2.91	$2.91	$0.60	$55.00
Baltimore	17.50	27.90	2.75	4.25	3.35	2.42	3.73	3.73	.44	48.32
Birmingham	17.75	28.275	3.90	3.40	....	2.78	2.55	2.55	.75*ff*	33.50*ee*
Boston	17.50	27.90	....	....	....	2.98*g q*	2.93*eg*	2.93*eg*	.42*g*	50.50*g*
Chicago	17.50	27.90	....	....	....	3.06‡*u*	2.97‡*o*	2.97‡*o*	40.00‡*bbr*	50.00‡
Cincinnati	17.50	27.90	....	....	....	2.65	2.55	2.55	.53*y*	49.38
Cleveland	17.50	27.90	2.26*pgg*	2.46*gg*	2.61*gg*	2.78*g*	2.55*o*	2.55*o*	.42*y*	42.70*AA*
Dallas	17.75	28.65	....	4.05	....	3.50*g*	3.75*o*	4.35*o*	.36	58.50*AA*
Denver	18.00	28.40	3.29	5.15	3.04	2.78	2.55*o*	2.55*o*	.43*ff*	45.00
Detroit	17.50	27.90	2.35	3.25	2.50	2.78	2.55*f*	2.55*f*	.53	46.00
Kansas City	17.50	28.65	3.50	3.00*yn*	2.65	2.78	2.58*o*	2.58*o*	.42	61.95
Los Angeles	17.50	28.15	3.30*n*	4.50*n*	4.20*n*	3.10*n*	2.00*en*	*l*	.64*n*	*l*
Minneapolis	17.50	29.88/28.02	....	....	....	2.63*dd*	2.55*hidd*	2.55*hidd*	.46*idd*	44.00*r*
Montreal	.....	21.95	2.95*Dff*	4.05*Eff*	3.25*Fff*	4.05*t*	3.60*tf*	3.60*t*	1.00*kt*	3.60*k*
New York	17.50	27.90	....	....	....	2.78*G*	2.55*Go*	2.55*Go*	.46*Gs*	44.00**
Philadelphia	17.50	27.90	3.60	3 40/3.65	3.50/4.60	2.54	2.94	2.94	.37	26.00
Pittsburgh	17.50	27.90	2.68	2.85	3.15	2.75	2.60*o*	2.60*o*	.38	49.00
St. Louis	17.50	27.90	....	....	....	2.63	2.55*h*	2.55*h*	.42*y*	51.21
San Francisco	17.50	28.15	2.40	....	3.40	2.79	4.00*aa*	....	.43	.....
Seattle	17.50	28.40	3.07*mcc*	2.93*mcc*	....	3.45*mocc*	2.91*kmcc*	....	.59*mcc*	52.00*mcc*
Toronto	.....	.....	....	....	....	4.00	3.65	....	.90	85.00

*‡ Delivered. * Note: Red lead in oil 50¢ higher than white lead in oil. *a Red lead prices change frequently due to pig lead price changes. *b U. S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 15 lb. *f Per 432 sq. ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Net carload lot prices; Minneapolis and vicinity. *k Per cwt. *l Not used. *m 1% discount for cash. *n F.o.b. city. *o Per 60-lb. roll. *p 6-drum. 50 gal. ea. *q Per 90-lb. roll* -r F.o.b. factory, Chicago. *s 468 Med. *t Federal tax included. *u Per 90-lb. square. *v Per ton. *w Price to large paint contractors is $1.25 less. *x Mineral surfaced. *y 55-gallon container. *z Drums. *aa Approximate cost per 100 lbs. *bb Roofers coating and cement; Price per ton. *cc LCL, truck delivery. *dd 2% cash discount. *ee Asphalt pitch in 100 lb. package. *ff 5-gal. drums. *gg F.o.b. factory. *hh Incl. freight. *D Std. Black. *E Ready-mixed. *F Over 80% ferric oxide. ** Aver. wt. approx. 425 to 550 lbs. drums. *G Freight absorbed to destination not over .35 cwt.

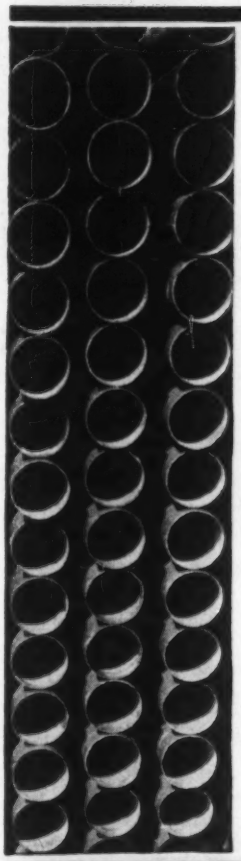
PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	Gauging per ton	VERMICULITE† Home Insulation pellets	Plaster aggregate	Concrete AGGREGATE‡ Treated	Untreated	ALUMINUM SHEET*h* Flat‡ .102" th 36"x96" & 48"x144" per lb‡	Corr roof .032" th 35"x12' per shu	STAINLESS STEEL SHEET*-TYPE 302*g 20 ga 48"x96–120' per cwt*hh*	28 ga 36"x120' per cwt*mm*	COPPER WATER TUBING-TYPE L 2000 ft lots per ft*n* ⅜"*b*	½"*c*
			per bag of 4 cu ft									
Atlanta	$29.00	$36.00	$1.45	$1.35	$1.50	....	$0.359*n*	$7.067*n*	$53.68	$61.18	$14.49*f*	$20.29*f*
Baltimore	21.50	32.00	0.95	1.15	....	$1.15	0.391	0.427*r*	56.25	64.25	0.1518	0.2129
Birmingham	36.00	43.00	1.55	1.55	1.75	....	0.391	8.148	55.68	65.68	0.1588	0.2230
Boston	19.90	.....	1.15	1.18	....	1.30	0.424*q*	24.90*op*	55.81*dd*	61.585*ddff*	0.1588	0.2230
Chicago	24.60	24.60	1.45	1.50	1.50/1.60	....	0.418*o*	8.574*fp*	57.55*fee*	65.55*fee*	0.1588	0.2230
Cincinnati	25.00*	22.00*	1.75	1.75	1.85	1.75	0.445	8.34	57.60	69.30*ff*	0.1588	0.2230
Cleveland	26.00	40.00	1.25	1.32	1.40	....	0.369*aa*	7.589	58.25	63.25	20.63*f*	25.86*f*
Dallas	29.80	31.80	1.20	1.25	1.30	....	0.379	0.439*r*	55.00	63.00	0.1449	0.2029
Denver	24.00	24.00	1.40	1.30	....	1.50	0.399	8.339	61.25*gg*	62.57*gg*	0.1588	0.2230
Detroit	24.00	24.00	1.32	1.33	1.42	1.42	0.397	8.919	59.51	72.20	15.00*fee*	25.34*f*
Kansas City	30.00	35.00	1.20	1.30	1.40	....	0.389	8.79	56.77*ee*	64.27*ee*	15.88*f*	22.30*f*
Los Angeles	25.00	26.00	1.25*ii*	1.20*ii*	1.45*ii*	1.25*ii*	0.422	8.72	69.35	87.10	0.1588	0.2230
Minneapolis	31.00	31.00	1.30	1.60	....	1.80	0.425	7.68	58.26	71.01*ff*	0.1507*d*	0.2115*d*
Montreal	28.80	33.20	1.00	1.30	1.35	1.30	0.364	8.00	54.00	....	0.206	0.22
New Orleans	35.00	37.00	1.50	1.20	1.25	1.25	0.359	0.366*aabb*	56.68	64.18	0.1449	0.2029
New York	23.00	29.00	1.25	1.20	1.40	1.30	0.424*fov*	7.45*f*	58.47	66.47	15.88*f*	22.30*f*
Philadelphia	23.25	32.00	1.35	1.35	1.35	1.40	26.50*fwz*	7.55*f*	53.23*f*	60.98*f*	14.49*f*	20.29*f*
Pittsburgh	25.00	29.00	1.25	1.25	1.30	1.25	0.42	9.19	56.81	62.63	0.1518	0.2129
St. Louis	30.00	37.00	1.25	1.50*jj*	1.60*jj*	1.50	0.402*io*	8.567*e*	53.14*kk*	71.14*kk*	15.88*fm*	22.30*fm*
San Francisco	24.00	26.00	1.05	1.03	....	1.24	0.416*rr*	8.14*cc*	71.85	68.00	0.1449	0.2029
Seattle	33.00	36.50	1.45	1.25*k*	1.65	....	0.369	7.569	64.75*ee*	72.75*ee*	0.1449	0.2029
Toronto	32.50	40.00	1.20	1.45	1.45	1.35	0.47	20.55	56.00	88.00	0.2684*pp*	0.374*pp*

† truckiots, delivered * fob whse ‡ delivered *a fob city *b ½" O.D. *c ¾" O.D. *d 10M ft & over *e 2–10M ft; 10M ft & up: $0.1925/ft *f per 100 ft *g 5 tons & up; cold roll, anneal & pickled; 2B finish *h 15M lb *i 3003 alloy; 1100 alloy: $0.456/lb *j 1100 & 3003 alloy, mill finish *k per bag of 3 cu ft *l treated has air entraining agent; untreated does not *m 2–10M ft *n fob plant, fr allow *o 5M lb & up *p 100 sq ft quantity *q 2M lb quantity *r per lb *t 36" x 96;– 10.81 lb/sh; 48" x 144":21.7 lb/sh *u 19.31 lb/sh *v in 4M-lb skids; $0.296/lb in 1M-lb cases *w 48" x 144" *x 36" x 96" $13.25/sh *aa 18M lb & up *bb fob mill *cc 28" x 6–12' *dd add $0.75/cwt for boxing *ee 4 tons & up *ff 26 ga *gg add $2/cwt boxing; $0.75/cwt on skids *hh Theoretical wt for 48" x 96"† 50.4-lb, per sh. *ii 300-bag lots *jj per 100-lb bag *kk mill shipment; add $2 per cwt for immediate del *mm Theoretical wt: 19.7-lb per sh *nn Deliv, warehouse means *vv ¼" O. D. *pp Incl 10% sales tax

ARMCO *Special Analysis Pipe*

Engineering Data and Advantages



▶ Here's a quick summary of Armco Special Analysis Steel Pipe—and its advantages in hydraulic mining, dredging, and wherever else you need dependable pipe for hydraulic material handling.

Armco Pipe is spirally wound and welded on automatic pipe machines that assure uniform high quality for every piece.

1. DIAMETERS FROM 6 TO 36 INCHES. You can get exactly the hydraulic capacity you need, with no need to compromise on the "closest available size."

2. WALL THICKNESSES FROM 9/64- TO ½-INCH. Meet your specific requirements for each job from this exceptionally wide range of wall thicknesses.

3. LENGTHS UP TO 50 FEET. Armco Pipe is supplied in any lengths up to 50 feet. Long lengths mean fewer joints; quick, low cost installation.

4. VARIETY OF JOINTS AND END FINISHES. Armco Pipe can be supplied with flanges or with machine reduced or expanded ends. Pipe ends can also be prepared for standard coupling or welding. Ask about other special end finishes available.

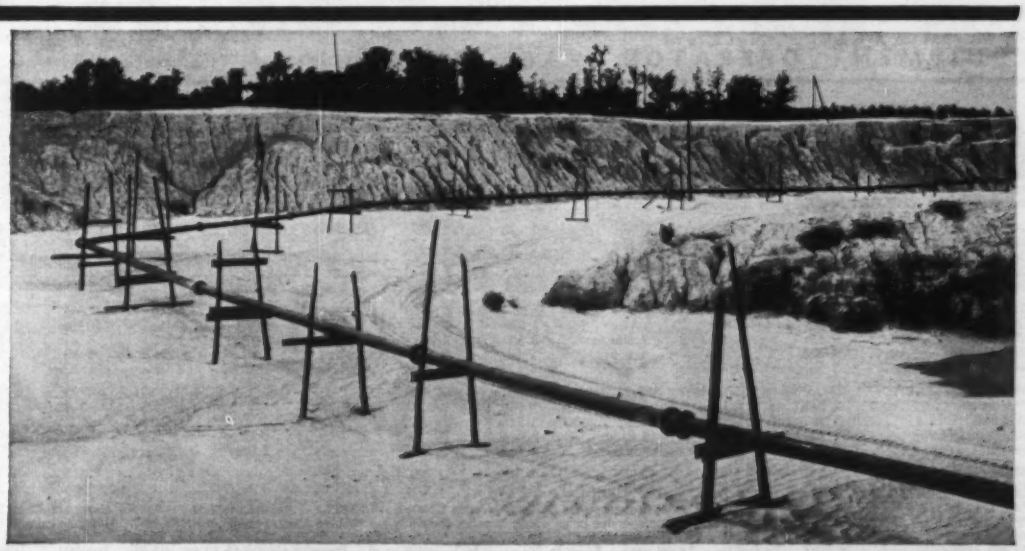
5. LOW COST PER UNIT OF MATERIAL HANDLED. Ample strength and ductility, combined with the high abrasion resistance of Armco Special Analysis Pipe assure long service life; keep costs down.

▶ Write for more data about Armco Special Analysis Steel Pipe. Armco has had more than 35 years' experience in making pipe to meet your special requirements. Also ask about standard Armco Steel Pipe for water supply lines and similar needs. Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 4965 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO SPECIAL ANALYSIS STEEL PIPE

ARMCO®

Dependable Pipe For Hydraulic Material Handling



Armco Pipe in the Noralyn, Florida, Trailings Line of the Florida Phosphate Division, International Minerals & Chemical Corporation.

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	⅝"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed	½" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION† loose, per 40-lb bag a	3" batts per M sf	GLASS FIBER INSULATION† loose, per 40-lb bag a	3" batts per M sf	ALUMINUM FOIL 60# Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq.ft.
Atlanta	....	$65.00	$45.00	$75.00	$75.00	.....	$75.00	$1.08	$75.00	$1.45b	$85.00	.....	.....
Baltimore	$49.25f	43.50f	31.30f	53.00f	65.00f	108.50f	69.00f	1.30	66.50	1.60	45.00	$4.00g	$33.50
Birmingham	67.00	56.00	46.75	75.00	68.50	116.00	71.00	1.32	70.00	1.60	75.00	3.76g	.....
Boston	46.50m	41.00m	31.50m	48.00m	64.00m	109.00m	79.00hn	1.45	75.00	1.40	56.00	5.80	54.50
Chicago	67.00	50.00	41.00	57.00	80.00	117.00	76.00	1.80	84.00	....	62.00bb	5.25	....
Cincinnati	46.40w	41.50w	30.80w	45.81w	65.00w	110.00w	65.00w	.....	61.00	1.25	75.00	3.31	44.50ew
Cleveland	60.00	60.00	40.00	60.00	70.00	111.00	70.00	1.35/1.50	75.00	2.20	82.00	7.76dj	.....
Dallas	55.00	52.50	40.00	62.50	73.50	122.50	71.00	1.90	65.00	1.35	65.83	4.25	.....
Denver	60.00	52.50	40.00	60.00	72.90	123.00	71.90	....	71.00s	1.30	50.00	11.00r	.....
Detroit	55.00	48.50	35.75	54.00	55.00cc	93.00cc	55.00cc	.....	.....	1.95b	73.00	.....	.....
Kansas City	65.00	55.00	40.00	65.00	72.00	120.00	75.00	1.40	80.00	1.40	80.00	15.00dd	.....
Los Angeles	57.50	50.00	0.31z	57.50	71.87	121.25	70.00	.....	80.00	1.35e	64.00	17.00o	25.40
Minneapolis	72.00	63.00	0.40z	65.00	70.00	114.00	70.00	1.30	78.00	1.30	78.00	6.50	.....
Montreal	60.00	52.00	39.00	53.00	60.00	.....	62.00	1.00	62.00	1.00	62.00	19.50e	49.50
New Orleans	65.00	50.00	45.00	65.00	65.00	100/115	70.00	1.95	79.00	....	.....	15.66u	36.00
New York	50.00	44.50	34.00	51.00	67.00	108.00	66.00	1.55	69.00	1.90	72.00l	5.20	48.80c
Philadelphia	50.00	48.00	34.00	48.50	67.50	105.00	49.20	.....	63/70	....	70/75	5.50/6	34.50/44.50
Pittsburgh	65.00	55.00	40.00	68.00	65.00	103/105	60.00	1.80	70.00	1.80	70.00	4.10	.....
St. Louis	58.00	52.50	39.00	58.50	67/72.50	115/120	75.00	1.70	80.00	1.30	69.00	5.50	.....
San Francisco	49.00c	42.75c	0.33x	53.00k	58.00	94.00	60.25	1.60	66.50	1.55	66.50	4.82l	52.50
Seattle	57.50	50.50	40.00	59.00	71.40	120.35	70.20	1.50y	81.00	1.65x	62.00aa	4.25g	.....
Toronto	61.00	50.00	40.00	64.50	75.00	.....	.....	0.90	47.00	....	51.00	21.50o	67.50

*a for hand packing *b per 30# bag *c carloads *d 40# kraft paper *e 56,000 sq ft up quantity *f full trailer loads *g 80# kraft paper backing *h LCL *i flameproof $75.00 *j 133 lin ft; per 100 roll *k plain core; asph core $56/M sq ft *l 2-in: $52/M sq ft *m 10 ton quantities *n distributor's siding *o per Msf roll *p per sf *r per cwt *s per 35# bag *t per M sq ft *u honeycomb, 1¼-in *w fob city *x per sq. yd. *y 26# bag *z 32# bag *aa fob warehouse *bb 2" *cc in 250 sf rolls, of 18", 20", or 24" width.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$3.25	$2.60	$2.95	$2.60	$2.75	$3.00	$3.15d	$1.38	$1.38
Baltimore	3.20d	2.75	3.325t	3.10/3.25	3.075t	2.975	3.075t	1.675t	1.675t
Birmingham	3.25	2.50	2.925k	2.32	2.72	3.075k	3.125k	1.375	1.475
Boston	3.35d	2.925t	3.475t	3.40	3.45l	3.13R	3.20d	2.22Y	2.22Y
Chicago	3.55k	3.30r	3.50k	3.15m	3.625y	3.53f	3.39o	2.50k	2.50k
Cincinnati	3.40	3.15	3.275t	2.925/3.175	3.10	3.28.N	3.445Z	2.20	2.10
Cleveland	3.45k	3.40	3.40k	3.40	3.40	3.325w	3.40d	2.65	2.65
Dallas	3.625	2.75w	2.95	2.75	3.437	3.00	3.10	1.50	1.50
Denver	3.50	2.975	2.925t	2.83	3.375t	3.00	3.20D	1.925	1.925
Detroit	3.58re	3.324q	3.475P	3.30rz	3.49dl	3.655H	3.125k	2.55rz	2.55rz
Kansas City	3.625	2.85	3.00	3.045	3.325	3.18o	3.25k	2.105	2.13
Los Angeles	3.60	2.96d	3.175t	2.79d	3.687S	3.25	3.44d	2.235t	2.235t
Minneapolis	3.325	2.90	3.07	2.85	3.13G	3.29n	3.075t	2.15	2.15
New Orleans	3.175	2.60	2.975m	2.85m	2.85m	3.00k	3.10r	1.475	1.475
New York	4.15br	3.73bJ	4.075p	3.99J	4.35A	3.66asF	3.978bL	2.592r	2.592rJ
Philadelphia	3.92i	3.30	3.63jM	3.37/3.92r	3.625S	3.80ur	3.615q	2.025	2.325
Pittsburgh	3.625k	3.275k	3.35k	3.425k	3.375k	3.50	3.375k	2.175k	2.08d
St. Louis	3.65c	3.325h	3.225k	3.225k	3.50k	3.50c	3.50E	2.275k	2.275k
San Francisco	3.75r	3.16r	3.175k	2.96r	3.537k	3.35U	3.56K	2.275r	2.275r
Seattle	3.50d	2.76d	3.07d	3.00d	3.25d	3.135X	3.31T	2.35d	2.35d
Montreal*†	2.00	1.80	1.90	1.70	2.05	2.00	2.10	1.25	1.25
Toronto**	2.558	2.392	2.39	2.45	2.496	2.60	2.444	1.35	1.35

* Cost of living bonus now included in basic wage. # Includes 5¢ hr tool replacement. † Plus 8% fringe benefits. ** Incl. 4% vacation fund. *a 6 hr. day. *b 7 hr. day. *c Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% or electricians plus 8¢ WF, 1% PF. *d Incl. 10¢ H&WF. *e Incl. 10¢ VF. *f Incl. 8% WF. *g Incl. 11½¢ WF. *h $2.725 homes & housing plus 7½¢ WF. *i Incl. 17¢ WF. *j Incl. 10½¢ hr. WF. *k Incl. 7½¢ hr. WF. *l Incl. 4% VF *m Incl. 5¢ hr. WF. *n Incl. 8¢ H&WF, 6% VF, 1% PF. *o Incl. 10¢ PF, 7¢ WF. *p Incl. 3% WF, 3% PF. *q Incl. 10¢ ins; 4% vac. and holiday pay. *r Incl. 4% WF and 20¢ PF. *s Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. *t Incl. 7½¢ H&WF. *u Incl. 1½% PF. *v Incl. 10¢ WF. *w Negotiating. *x 5¢ VP. *y Incl. 22½¢ WF. *z Incl. 7½¢ IF, 5¢ H&WF. *A Incl. 15¢ WF, 15¢ PF, 20¢ B.F. *B Incl. 3% WF. *C Incl. 2½¢ H&WF. *D Incl. 10¢ H&WF, 5¢ organ. *E Incl. 6% WF, plus travel pay per day. *F Plus $4 per day Annuity contrib. *G Incl. 3¢ Prom. *H Incl. 7¢ WF, 6% VF. *I Incl. 15¢ H&WF, 5¢ for Advtg. *J Incl. 5% WF, 6 PH. *K Incl. 11¢ WF, 12½¢ VF, 10¢ PF. *L Incl. 3% WF, 3% PF, 2% VF, 1% EF. *M Incl. 7½¢ PF. *N Incl. 1% WF. *O Incl. 10¢ WF, 1% PF. *P Incl. 10¢ hosp. ins.; 5¢ vac. *R Incl. 12¢ WF and 1¢ apprentice. *S Incl. 12½¢ H and WF. *T Incl. 21¢ H, W & VF. *U Incl. 7½¢ WF, 4% VF. *V Incl. 5% WF, 3% PF. *W Incl. 2% VF. *X Incl. 6¢ VF, & 7½ H & WF. *Y Incl. 7¢ H & WF. *Z Incl. 9½¢ WF.

MEXICO CITY PRICES

In Pesos, F.o.b. City		June '55	July '55
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.25	2.25
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.25	2.25
Struct. Iron Workers (8 hr. day) Remachadores.	av. per hr.	1.37*	1.37*
Struct. Steel Shapes 3"-15" x 12 meters	per metric ton	1490.00	1490.00
Reinf. Steel, Corr. Rods ⅜" x 11 meters	per ton	1490.00	1490.00
½" x 11 meters	per ton	1490.00	1490.00
⅝" x 11 meters	per ton	1490.00	1490.00
¾" x 11 meters	per ton	1490.00	1490.00
⅞" x 11 meters	per ton	1490.00	1490.00
1" x 11 meters	per ton	1490.00	1490.00
Gravel truck load of 3½ cu. meters Blue Gravel	per tr. load	70.00	70.00
Rose Gravel	per tr. load	65.00	65.00
Cement, Std. Port. (Tolteca)	per ton	185.00	185.00
Lumber 3rd Class Pine	per M ft.	1400.00	1400.00
1st Class Pine	per M ft.	2000.00	2000.00
2nd Class Pine	per M ft.	1800.00	1800.00

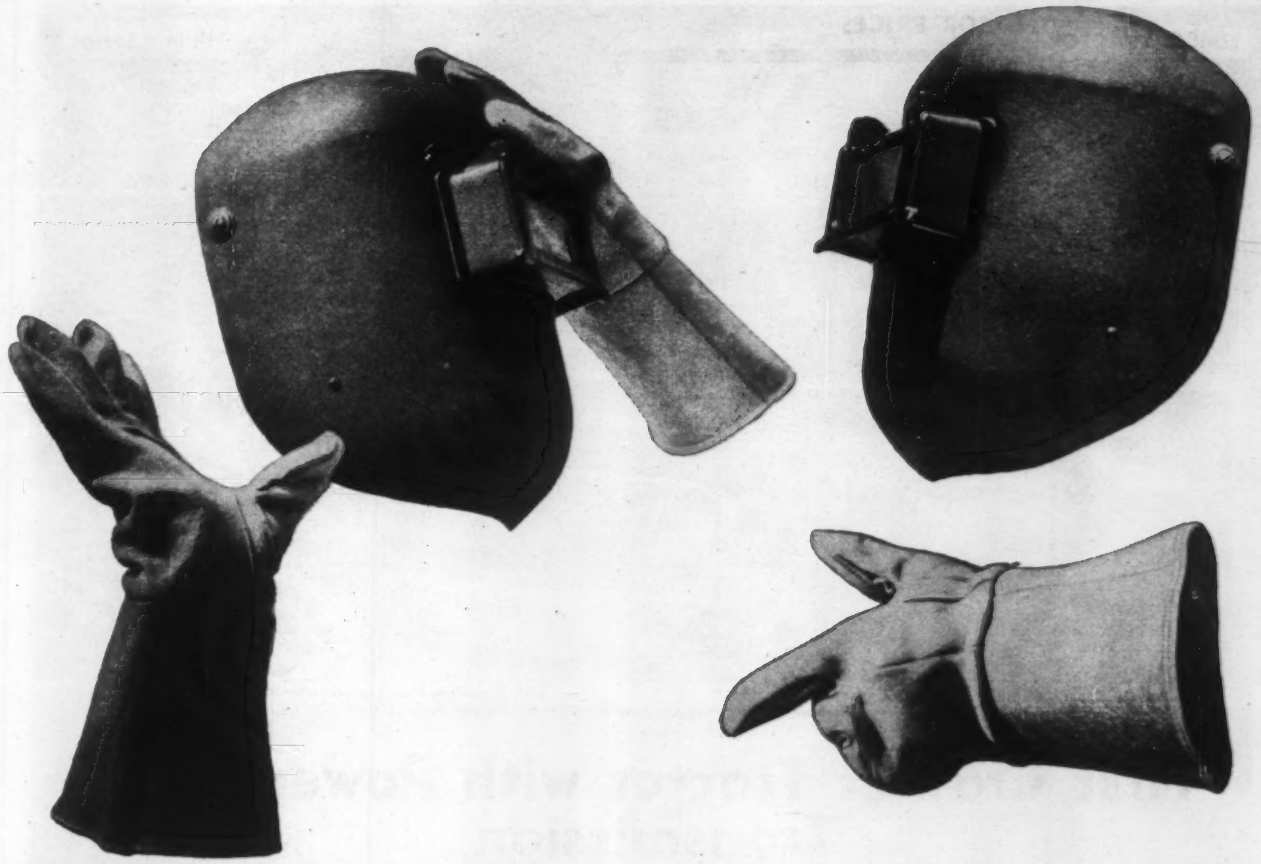
* 1st & 2nd floors. Aver rate 4.38

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): **$3.264. ENR Common Average $2.087**

EQUIPMENT OPERATOR WAGE RATES

	Truck drivers 1½ T	Truck drivers 4 cy Dump	Truck drivers +4 cy	Tractor Operators incl bulldozers 34-49 hp	Tractor Operators incl bulldozers 70-100 hp	Tractor Operators incl bulldozers 100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	1.40	1.40	1.60	2.335	2.335	2.335	2.325	2.85	2.85	2.325	2.10	1.55
Baltimore	1.65a	1.80a	1.90a	2.45/2.60b	2.45/2.60b	2.45/2.60b	245/2.60b	3.10/3.25b	3.10/3.25b	2.45/2.60b	2.45/2.60b	2.25
Birmingham	1.59	1.85ff	1.92gg	2.46	2.46	2.46	2.60	2.60	2.60	2.46	2.185	1.525
Boston	1.945c	.....	.....	3.025d	3.025d	3.025d	3.025d	3.40	3.40	3.40	2.555	2.22c
Chicago	2.12fii	.....	.....	2.90ag	3.05ah	3.16ai	2.90a	3.35a	3.35a	3.00a	3.00a	....
Cincinnati	2.10j	2.20j	2.30	2.925	2.925	2.25	2.925	3.175	3.175	3.175	3.175	3.175
Cleveland	2.42m	2.42m	2.42m	3.15	3.15	3.15	3.15	3.40	3.40	3.15	3.025	3.025
Dallas	1.50	1.50	1.50	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.60/2.625l	1.60/2.625l	1.50/2.00l	1.50/1.55l
Denver	2.05	2.05	2.15	2.05	2.66	2.66	2.66	2.83	2.83	2.66	2.66	2.275
Detroit	2.35	2.35	2.35	3.40m	3.40m	3.40m	3.40m	3.40m	3.40m	3.40m	3.025m	2.68m
Kansas City	2.065n	2.065o	2.14p	2.25	2.80q	2.80q	2.80q	3.045	3.045	2.66r	2.80t	2.19
Los Angeles	2.34u	2.34u	2.37u	2.87m	2.87m	2.87m	2.87m	3.10m	3.10m	3.01m	2.59m	2.445u
Minneapolis	2.15	2.15r	2.30w	2.53	2.75q	2.97z	2.97z	2.97y	3.23z	2.53	2.42	2.25
New Orleans	1.575	1.575	1.575	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.15	1.575
New York	2.12¼aa	2.52bb	2.52bb	3.176cc	3.176cc	3.176cc	3.167cc	4.095cc	4.095cc	3.31cc	3.31cc	2.78cc
Philadelphia	1.825/2.025v	1.825/2.025v	1.825/2.025u	3.07/3.82m	3.07/3.82m	3.07/3.82m	3.07/3.82m	3.07/3.82m	3.07/3.82m	3.07/3.82m	2.89m	2.05m
Pittsburgh	2.275u	2.275u	2.275u	2.95u	3.275u	3.325u	3.425u	3.425u	3.425u	3.325u	3.325u	2.275u
St. Louis	2.20	2.20	2.20	3.225kk	3.225kk	3.225kk	3.225kk	3.225kk	3.225kk	3.225kk	2.625kk	2.2675kk
San Francisco	2.30u	2.30u	2.315u	3.07m	3.07m	2.307m	2.07m	3.40m	3.40m	3.23m	2.68m	2.40m
Seattle	2.00nu	2.00ndd	2.80nee	2.75m	2.95m	2.95m	2.95m	3.30	3.30m	3.05m	2.75m	2.62m
Montreal	1.25	1.25	1.25	1.63	1.63	1.63	1.63	1.89	1.89	1.63	1.70	1.50
Toronto	1.51ii	1.51ii	1.72ii	1.98ii	1.98ii	1.98ii	1.98ii	2.45ii	2.45ii	.....	2.13ii	2.13ii

*a Incl 5¢/hr HWF *b lower rates, straight time, other broken *c 2-axle; 10-wheel $2.00; Euclid $2.20 *d Intermediate *e bldg constr; highway $2.145 *f less than 2-t *g blade *h scoop, bldg *i scoop, road *j plus $2 pd by employer for hosp. death benefits to family *k bldg constr; steel constr $3.40 *l higher rates are union, other taken from min wage scale approved by County Commissioners Court *m incl 10¢ H&WF *n flatbed *o under 10 cy *p over 10 cy *q over 50 hp *r blade grader *s form and subgrade *t single *u incl 7½¢ HWF *v up to 6 cy *w 6-8 cy *x cat oper *y up to 3½ cy *z 3½ cy & over *aa plus approx $5.30 kw W&PF *bb incl 3% WF, 2% PF, 11 PH *cc incl 5% WF *dd up to 5 cy *ee 5 cy & over *ff 3 T but not incl 5 *gg 5 tons & over *hh excavating *ii incl 4% VP *jj Includes 12¢ H, W & PF *kk 7½¢ WF included in base pay.



WHAT—*HANDLES LIKE CARBON STEEL?*

That's right. 3 times stronger than carbon steel, Lukens "T-1" steel can be welded without preheating or special joint design.

Although Lukens "T-1" steel is a tough, high strength, heat treated steel, equipment builders will find that the techniques of working with this new steel are no different than with carbon steel. Recognizing that higher strength steels require higher pressures to form, proper design procedures will permit this low carbon, quenched and tempered alloy plate steel to be fabricated not only in the shop but also in the field. Those items of equipment which may not have to be stress relieved for dimensional stability or other special reasons can be fabricated of Lukens "T-1" steel to take advantage of its tough "as-welded" characteristics.

In addition to easy fabrication, Lukens "T-1" steel has other benefits of equal value to equipment builders. Three times stronger than carbon steel, this new steel has lighter weight and reduced thickness in comparison to heavier, thicker plates of carbon steel, thereby reducing material, fabrication and shipping costs. Lukens "T-1" steel's excellent resistance to the combination of wear and impact abuse lowers maintenance and replacement costs, lengthens equipment life. Lukens' range of steel plate sizes—including the widest and heaviest plates available anywhere—makes possible additional savings for builders through the use of wider plates that require fewer welded seams.

A new addition to Lukens' complete line of carbon, alloy and clad steels, this new steel's unusual combination of properties suit it especially to applications in pressure vessels, bridges, shipbuilding, construction machinery and general industrial equipment. On problems of design, material selection, application and fabrication techniques, Lukens offers full technical assistance. If you would like further information on Lukens "T-1" steel, write for Bulletin 765. Address: Manager, Marketing Service, 774 Lukens Building, Lukens Steel Company, Coatesville, Pa.

LUKENS

"T-1" STEEL

THE NEWEST IN A COMPLETE LINE OF ALLOY STEELS

LUKENS STEEL COMPANY, COATESVILLE, PENNSYLVANIA

The Eimco 105 Tractor with the famous RockerShovel attachment in Australia. This powerful tractor-excavator has a lifting capacity at the bucket of over 36,000 pounds. It will load faster, cheaper and load much bigger rock than 1½-2 cubic yard boom shovel.

First Crawler Tractor with Power-Shift Transmission

Eimco tractors are the first crawler tractors with power-shift transmissions. Now it is as easy to operate a crawler tractor as driving the latest model automobile. All the work of operating is tremendously simplified — smooth power-controls shift gears and reverse without any operator effort.

Combined with the torque converter fluid drive, **the revolutionary Eimco transmission allows smooth starts with only a touch of the foot throttle, or instant reversals with a flip of the wrist.**

The Eimco crawler tractor is the first without a master clutch; one hand operation maneuvers and reverses and spin turns or shifts gears in motion, without dropping the load or stopping.

Here are the exclusive features of the Eimco Tractor transmission that mean more work done, less effort, greater profits:

1. **Transmission gears are always in mesh and always run in the same direction.** This is the first crawler tractor in which the transmission gearing does not reverse when the tractor reverses. This means less wear and tear on gearing, longer trouble-free life.

Spreading fill dirt dumped by 30 yd. bottom dump trucks at Wanship Dam on the Weber River. Cable and hydraulic control Eimco bulldozers are at work on this USBR job.

2. **All clutches bathed in cooled oil,** for greater clutch life.

3. **Power-shifted Eimco clutches NEVER need adjustment.**

4. **The Eimco Tractor does not have a master clutch** — hence, no master clutch trouble.

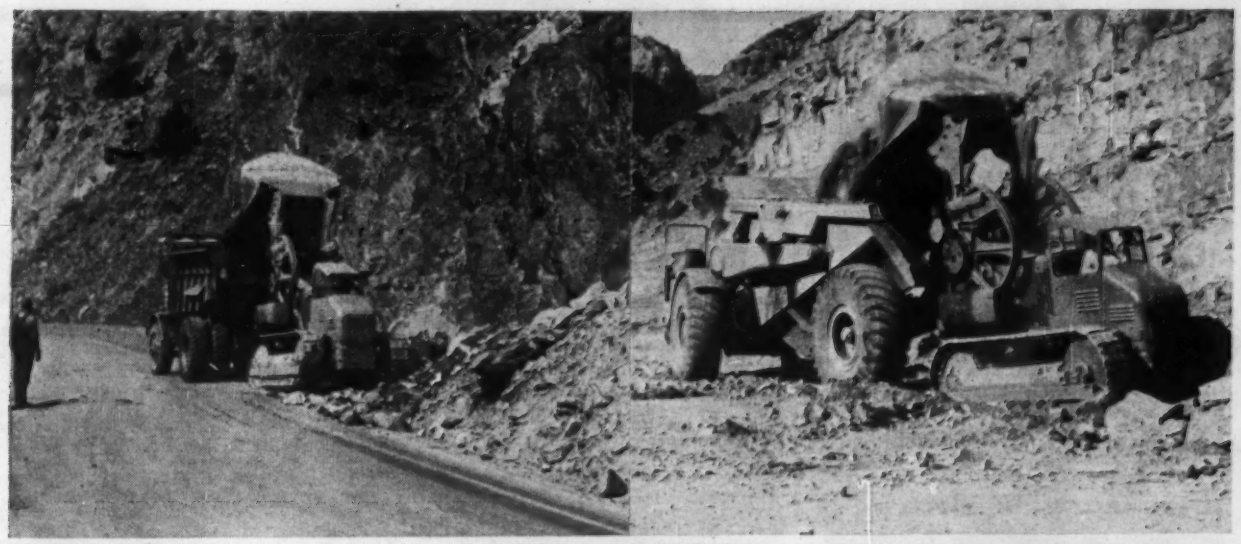
5. **Shift anytime, up or down, forward or reverse, at any speed, without stopping or slowing down.**

6. **Separate independent track drive** through one transmission. This exclusive Eimco feature permits independent track reversal of each track, for gradual or spin turns.

7. **Complete accessibility.** The front cover of the tractor is readily removable to work on the transmission, or the entire transmission can be removed without disturbing other assemblies in the machine.

Learn for yourself — "test-drive" an Eimco and you will never want to go back to wrestling with a conventional tractor.

THE EIMCO CORPORATION
Salt Lake City, Utah—U.S.A.



Eimco Tractors with loading attachment on highway rockslide clean up job in Wind River country of Wyoming. The Eimco loads big trucks 90% full from the end. This feature of the Eimco Loader permits efficient cleanup in one lane without disturbing traffic in the other lane.

Full visibility with the Eimco bulldozer permits using the machine as a pusher with operator able to see what he is doing. Pushing 30 yd. bottom dump trucks out of soft uneven ground. Torque converter balances speed and power to give smooth even push without damaging equipment.

Eimco loaders work in remote places, they are preferred equipment because of their rugged construction and easy operation. These two pictures show a loader at work on a river level job in the French Cameroons in Africa where digging in rock is easily accomplished with Eimco equipment.

THE EIMCO CORPORATION

Salt Lake City, Utah—U.S.A. • Export Offices: Eimco Bldg., 52 South St., New York City

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B-128

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲ **Mass., Waltham**—SCHOOL—BA 8/18—City, John W. McDevitt, 55 School St., Junior High School, Cabot, Reservation, Lexington St. $2,000,000. Plans deposit $100, Thomas Worcester, Inc., 85 State St., Boston, engr.-archt. CD 11/5/53.

HEAVY CONSTRUCTION—LB & CA

▲ **MASSACHUSETTS**—Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston,
V. Barletta Co., Roslindale, Mass. LB **$1,855,194.** Contr. 906, constr. William P. Morrissey Blvd., Boston. Bids July 21. CD 7/6.

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boyiston St., Boston,
Henley Lundgren Co., Shrewsbury, Mass. LB **$1,990,658.** Contr. 51-195 hy. and bridge, West Springfield. Bids July 20. CD 7/15.

▲ **White Oak Excavators, Inc.**, 61 E. Main St., Plainville, Conn., CA **$4,223,464,** est. $4,225,000. Contract 288, Hogback Dam, on west branch of Farmington River, Litchfield Co. HARTFORD, CONN. Bd. Contract & Supply, Metropolitan Dist., 115 Broad St., Hartford, Conn. Bids July 6. CD 7/11, under LB.

BUILDINGS—LB & CA

▲ **Monaco Constr. Co.**, 109 Reservoir Ave., Bridgeport, Conn., CA **$1,727,000.** SENIOR HIGH SCHOOL, NEW CANAAN, CONN. Bd. Educ., Senior High School Bldg., South Ave., New Canaan, Conn. Bids June 2. CD 6/7, under LB.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **Pa., University Park**—CLASSROOM BLDG.—BA 8/24—General State Auth., 18 and Herr Sts., Harrisburg, general classroom bldg. for Pennsylvania State University, $1,500,000. Plans deposit $25, Reliable Engineering Corp., 2605 Beale Ave., Altoona, engrs.-archts. CD 8/5/53, under Pa., State College.

▲ **N. Y., Castleton Corners**—SHOPPING CENTER—Bids Asked—Park Fairway Corp., c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, shopping center, 4-acre tract at Manor Rd. and Victory Blvd. $1,500,000. CD 3/21.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany,
N. Y.—**John C. Peterson Constr. Corp.**, 958 Church St., Baldwin, N. Y. LB **$1,966,706,** est. $2,514,000. 7.02 (4.06 Acc.) mi., Sunken Meadow Spur Parkway, Contr. No. 6, SMSP 55-1, Suffolk Co.;
N. Y.—**A. E. Ottaviano, Inc.**, 80 Brook St., Croton-on-Hudson, N. Y. LB **$2,520,957,** est. $3,306,000. Pt. 1 S.H. 1898, 2.1 mi., 0.53 ross roads, Palisades Int. Parkway Sec. 2 Rte. 303 to Convent Rd. N. J. State Line-Congers, PIP 55-1, R.C. 55-52, Rockland Co.;
N. Y.—**Bero Constr. Corp.**, McKinley Bldg., Buffalo 2, N. Y. LB **$1,357,846,** est. $1,026,000. 5.62 mi. (2.82 acc.) Lake Ontario State Parkway Sects. B-C-D. paving, Long Pond Rd. and ramps, LOSP 55-2P, Monroe Co.; LB **$3,511,010,** est. $4,894,000. 5.28 mi. (1.07 acc.) N. Y. State Thruway-Erie Sect., Sub.-E-3A (Brocton to Pomfret Town Line); Lake Rd., Berry Rd., Van Buren Rd., Chestnut St., Lowell Rd., and Farel Rd., E.T. 55-2, S.T. 55-3, Chautauqua Co.;
N. Y.—**Weber Constr. Co., Inc.**, 133 Wall St., Schenectady, N. Y. LB **$646,281,** est. $769,000. 6.46 mi. Middleburg-Franklintown Part 2 S.H. 8340; Livingstonville—Preston Hollow Parts 1 and 2, S.H. 8377, FARC 55-49, Schoharie Co.;
N. Y.—**Louis Mayersohn**, 36 State St., Albany, N. Y. LB **$714,592,** est. $839,000. 3.94 mi. Syracuse Turnpike Part 1 SH 9023, Syracuse Turnpike S. H. 337, Syracuse Turnpike Part 3 SH 9022, FARC 55-48, Madison Co.;
N. Y.,—**Northampton Constr. Corp.**, Main St., Westhampton Beach, L. I., N. Y. LB **$82,700,** est. $93,700. beach protection at Cedar Beach town of Brookhaven, B. F. 55-12, Suffolk Co.;
N. Y.—**John Arborio, Inc.**, West Cedar St., Poughkeepsie, N. Y. LB **$473,240,** est. $538,000. 1.65 mi. South S. H. 223, FARC 55-47, Dutchess Co.;
N. Y.—**Central New York Contg. Co.**, Syracuse, N. Y. LB **$326,649,** est. $351,000. 5.53 mi. Auburn Elbridge S.H. 592, FARC 55-50, RC 55-51, Cayuga Co.; LB **$378,629,** est. $405,000. 3.77 mi. Baldwinsville-Cold Spring SH 671, FARC 55-45, Onondaga Co.;
N. Y.—**John M. Robertson, Inc.**, 6 Ceperley Ave., Oneonta, N. Y. LB **$174,010,** est. $255,000. 6.39 mi. East Springfield-Cherry Valley S.H. 934, Cherry Valley-Sharon Springs, Sharon Springs-Canajoharie, Part I, SH 8064, R.C. 55-53, Otsego Co.;
N. Y.—**Ernest J. Peretta Excavating Co.**, Amsterdam, N. Y. LB **$141,331,** est. $176,000. 2.89 mi. Thompson Ridge-Sullivan Co. Line, County Rd. No. 48, FASS 55-3, Orange Co.;
N. Y.—**Asphalt Roadways Co.**, 1766 Main St., Buffalo, N. Y. LB **$375,392,** est. $468,000. 4.13 mi. Kennedy-Ellington S.H. 9071, FARC 55-43, Chautauqua Co.;
N. Y.—received no bids July 21, Loon Lake-Pottersville Taylors S.H. 692, etc., FARC 55-44, Warren and Essex Counties. CD 6/27.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, Md. LB **$2,348,878.** constr. section of approach expressway 0.833 mi. incl. portion of toll plaza 0.868 mi. access roads, 2 bridges 350 ft. and 166 ft., Patapsco Tunnel Proj. Contr. PT-107. Bids July 21. CD 6/28.

BUILDINGS—LB & CA

▲ **Audwin Garden Homes**, c/o Par-Sen Realty Corp., 70 W. Montauk Hy., Lindenhurst, N. Y. Owner Builds. **$2,000,000.** 168 HOUSES on 42 acre tract at Sunrise Hy. and Irish Lane, EAST ISLIP, N. Y.

▲ **Orchard Park at Huntington**, c/o Bonded Realty Corp., Sunrise Hy., Lindhurst, N. Y. Owner Builds. **$3,000,000.** 150 HOUSES on tract at Caledonia Rd., HUNTINGTON, N. Y.

▲ **Whitewood Estates**, c/o Erwin Gerber & James Pancani, archts., 1180 Raymond Blvd., Newark, N. J. Owner Builds. **$3,500,000.** 230 HOUSES on tract on Germonds Rd. near Rte. 304, NEW CITY, N. Y.

▲ **Quaker Ridge Homes**, c/o Alwin Cassens Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$4,200,000.** 200 HOUSES on 100 acre tract at Quaker Patch and Rte. 25A, STONEY BROOK, N. Y.

▲ **Oradell Forest Homes**, c/o Arthur Williamson & Co., 484 Route 17, Paramus, N. J. Owner Builds, **$1,500,000.** 54 HOUSES on tract on Wildwood Rd. west of Kinderkamack Rd., ORADELL, N. J.

SOUTH

HEAVY CONSTRUCTION—BA

▲† **Kentucky**—BA 9/15—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., Locks Main Lock 110x1,200 ft., auxiliary lock 110x600 ft., gates and other operating machinery, Greenup, Greenup Co. $20,000,000. CD 7/25.

HEAVY CONSTRUCTION—LB & CA

▲ **St. Louis-San Francisco Ry. Co.**, E. L. Anderson, ch. engr., 309 N. Jefferson St., Springfield, Mo. Own Forces. $10,000,000. Tennessee Yard at Capelville, near Memphis, incl. 50 classification tracks, office, locker room, hotel, sewage disposal plant, water sys., diesel shop and other facilities, MEMPHIS, TENN. CD 6/15;
Pioneer Contg. Co., 453 Plum Ave., Memphis, Tenn., CA grading work. (Memphis, Tenn.).

BUILDINGS—LB & CA

▲ **J. A. Jones Constr. Co.**, 133 Ellis St. N.E., Atlanta, Ga., CA, Est. over **$2,000,000.** 10 story OFFICE, Pryor and Decatur Sts., ATLANTA, GA. Fulton County Federal Savings & Loan Assn., 26 Pryor St. N.E., Atlanta, Ga. Awarded July 15. CD 3/23.

▲ **McDonough Constr. Co., of Ga.**, 7 Baltimore Pl. N.W., Atlanta, Ga., CA PAINT SERVICE WAREHOUSE and SALES OFFICE, ATLANTA, GA. E. I. du Pont de Nemours & Co., du Pont Bldg., Wilmington, Del.

▲ **E. I. du Pont de Nemours & Co.**, du Pont Bldg., Wilmington, Del., Own Forces, PAINT PLANT, TUCKER, GA.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	**Middle West**
Middle Atlantic	**West of Mississippi**
South	**Far West**

PROPOSED WORK

Water Supply	**Public Buildings**
Sewers, Waste Disposal	**Mass Housing**
Bridges	**Commercial Buildings**
Streets & Roads	**Industrial Buildings**
Earthwork, Waterways	**Unclassified**

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

MIDDLE WEST

BUILDINGS—BA

▲ **Ill., East St. Louis**—HIGH SCHOOL—BA 8/18—Bd. Educ., School Dist. 189, St. Clair Co., Edwin Barmann, pres., 240 N. 6 St., 2 story, brick, masonry, steel, rein.-con. high school, 51 and State Sts. $4,077,400. Charles B. Spencer, Chemical Bldg., 721 Olive St., St. Louis 1, Mo., archt. CD 6/30.

HEAVY CONSTRUCTION—LB & CA

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,
Sollitt Constr. Co., 301 S. Columbia St., South Bend 24, Ind., CA, **$11,952,670,** 10 service areas, near East Gary, Porter Co.; Rolling Prairie, LaPorte Co.; Elkhart in Elkhart Co.; Brighton, LaGrange Co., Fremont, Steuben Co. Bids July 13, awarded July 20. CD 7/18, under LB.

BUILDINGS—LB & CA

▲ **W & B Constr. Co.**, (Sanford Wakser & J. L. Berger), 2154 E. 22 St., Cleveland 15, O. CA **$1,994,755.** general contract JUNIOR HIGH SCHOOL, SHAKER HEIGHTS, O. Shaker Heights School Bd., Shaker Heights 20, O. Perkins & Will, 39 W. Jackson St., Chicago, Ill., and Michael M. Kane & Assoc., 12381 Cedar Rd., Cleveland Heights 6, O., archts. Awarded July 9. CD 11/5/53.
Spohn Heating & Ventilating Co., 1175 E. 45 St., Cleveland 3, O. CA **$580,000.** plumbing, heating and ventilating work. (Shaker Heights H. S.).

▲ **Sumner Sollitt Co.**, 307 N. Michigan St., Chicago 1, Ill., CA, **$3,000,000.** CEMENT MFG. PLANT, WAREHOUSE and OFFICE, BUFFINGTON, IND. Universal Atlas Cement Co., 100 Park Ave., New York, N. Y. Bids May 21, awarded July 20. CD 5/6.

▲ **Koppers Co., Inc.**, Kopper Bldg., Pittsburgh, Pa., CA, Est. over **$5,000,000.** 87 COKE OVENS, INDIANA HARBOR, IND. Inland Steel Co., 38 Dearborn St., Chicago 3, Ill. CD 5/18.

▲ **General Motors Corp., Fisher Body Div.**, General Motors Bldg., Detroit, Mich. Owner Builds. Est. **$10,000,000** STAMPING PLANT with ADMINISTRATIVE OFFICES on 160-acre site, MARION, IND. CD 7/25.

▲ **Ehler Wenborg**, 8 E. McDonald Rd., Prospect Heights, Ill., Own Forces, **$6,400,000.** 230 HOMES, PROSPECT HEIGHTS, ILL.

▲ **Di Cicco Constr. Co.**, Sauk Trail and Euclid Dr., Chicago Heights, Ill., Own Forces, **$3,500,000.** 200 HOMES, SOUTH CHICAGO HEIGHTS, ILL. O, B. Santo Stefano, 2418 Union Ave., Chicago Heights, Ill., archt.

▲ **Shubow & Hollo**, 20169 James Couzens Hy. Detroit 35, Mich. CA Est. **$7,500,000.** Loch Alpine, 466 HOMES, Huron River Drive, ANN ARBOR, MICH. Brooks-Newton Realty, Inc. (agent), Brooks Bldg., Ann Arbor, Mich.

▲ **M. W. Huber & Son**, 3548 Adams Rd., Birmingham, Mich. Owner Builds. **$2,500,000.** Leonard Lane Subdivision 100 custom HOMES, BIRMINGHAM, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲† **Mont., Glasgow**—OPERATIONS BLDG.—BA 8/17—U. S. Eng., City-County Airport, Walla Walla, Wash., 1 story, 5,100 sq. ft. masonry, steel base operations bldg., control tower, 1 story, 9,300 sq. ft. masonry, steel crash and structural fire station, Glasgow Air Force Base, ENG-45-164-56-4. Plans deposit $100. CD 2/14.

BUILDINGS—BA

▲ **Mo., St. Louis**—RESIDENTIAL HALL and INFIRMARY—BA 8/11—Masonic Grand Lodge of Missouri, c/o Lewis C. Robertson, supt. Masonic Home of Missouri, 5351 Delmar Blvd., Zone 12, 10 Story,

(Continued on page 66)

IS YOUR REPUTATION AT STAKE ON THIS JOB?

Make-shift or hit and miss piping systems are not only costly in corrections and repairs . . . but certainly reflect on the ability of the mechanical engineer. It is *not* necessary to gamble on an efficient, long lasting insulated piping system. RIC-WIL's forty-five years in the Insulated Piping Field is your assurance of the finest piping system for both overhead and underground use. Specify RIC-WIL and be sure of the results.

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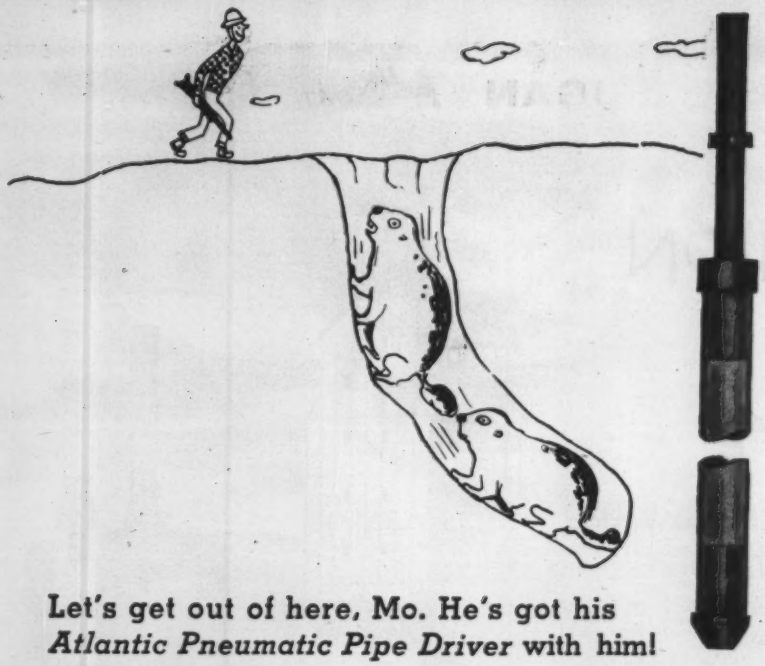

Let's get out of here, Mo. He's got his *Atlantic Pneumatic Pipe Driver* with him!

The Atlantic Pneumatic Pipe Driver is fast! No delay in coupling additional lengths of pipe—specially designed recess in driving head does not burr pipe. Universal joint action between driving head and shank simplifies driving in small spaces. Wide size range. Fits standard pneumatic pavement breakers. Send for Booklet 2.

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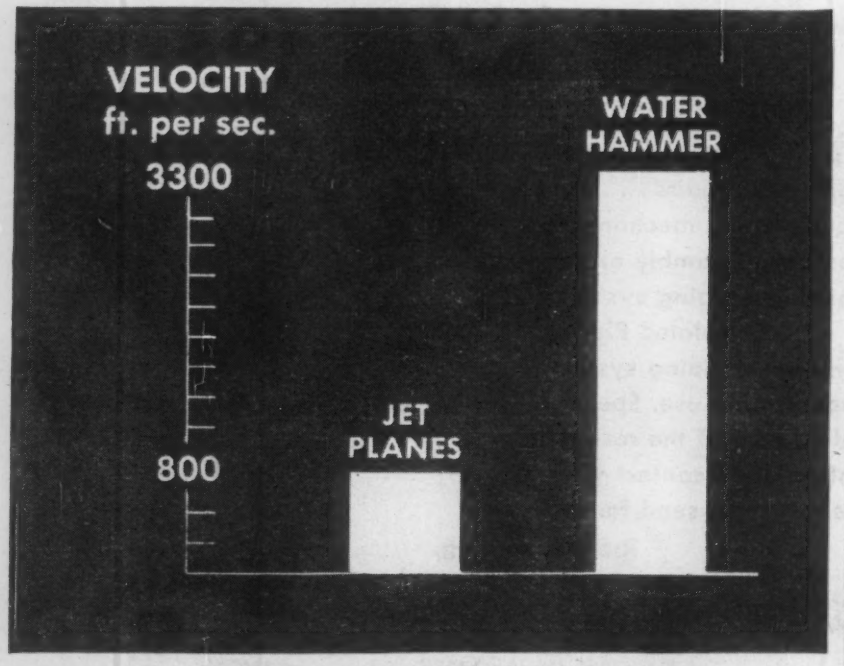

How To Prevent Pipeline Rupture

• Sudden closure of a valve can set up hammer that travels 4 times faster than the fastest jet . . . fractures valves, ruptures long lines. Simplex Type CCAV Valve ends these dangers. It controls transfer time, and releases both air and water to prevent damage. And lets in air to prevent vacuum collapse if breaks occur or lines are drained.

Write for Brochure! **Simplex Valve & Meter Company,** Dept. ENR-8, 7 East Orange Street, Lancaster, Pa.

(Continued from page 64)

bsmt., penthouse, 1 and 2 story wings, brick, steel, rein.-con residential hall and infirmary. $2,250,000, Kenneth E. Wischmeyer, 911 Locust St., Zone 1, archt. Leslie J. Bergmeier, 6630 Clayton Rd., Clayton, Zone 5, struct. engr. Geo. E. Horch, 4658 Gravois Ave., Zone 16, mech. engr. CD 7/12.

▲ **Tex., Tyler**—HOSPITAL—BA 8/17—Bd. of Texas State Hospitals & Special Schools, 4405 Lamar Blvd., Austin, 100,000 sq. ft., 340-bed East Texas Tuberculosis Hospital plant, $1,800,000. Plans deposit $50 for general, $50 for any mech. plans. Broad & Nelson, 505 N. Ervay St., Dallas, Walter C. Moore, 4405 Lamar Blvd., Austin, Landauer & Shafer, 4801 Lemmon St., Dallas, and Edward L. Wilson Jr., Merc Comm. Bldg., Dallas, archts.-engrs. CD 6/22.

▲ **Tex., Dallas**—RETAIL SHOPS—Bids asked—Exchange Park, c/o Wm. A. Blakely & Accos., Guardian Life Bldg., retail shops, $2,000,000. CD 7/13.

HEAVY CONSTRUCTION—LB & CA

▲ **Bechtel Corp.,** 220 Bush St., San Francisco, Calif. CA Approx. $4,250,000. 110 mi. natural gas pipe line from Tioga to Minot and Williston, NORTH DAKOTA. Montana-Dakota Utilities Co., F. R. Gamble, vice pres., 631 Second Ave. S., Minneapolis, Minn. CD 7/5.

▲ **Pasotex Pipe Line Co.,** First Natl. Bank Bldg., Houston, Tex. (Standard Oil Co., parent owner). Owner Builds. $7,500,000. 70 mi. 20 in. crude oil line, Wink to El Paso, TEXAS. CD 7/20.

FAR WEST

HEAVY CONSTRUCTION—LB & CA

▲ **Idaho Power Co.,** 1220 Idaho St., Boise, Idaho, Force Account $3,000,000 50 mi. 230 kv line, between Baker and La Grande, Baker and Union Counties, OREGON.

▲ **CALIFORNIA**—State Div. Hys., Sacramento, **Grove, Shepherd, Wilson & Kruge, Inc.,** 120 6 St. N., Seattle, Wash., CA, $5,878,248, 8-lane freeway between 10 St. in Oakland and San Francisco-Oakland Bay Bridge distr. structure as unit of Eastshore Freeway, Oakland, Alameda Co. Bids July 13, awarded July 22. CD 7/15, under LB.

▲ **Chicago Bridge & Iron Co.,** 203 McCormick Bldg., Chicago 4, Ill., CA $2,800,000. wind tunnel, SAN DIEGO, CALIF. Convair, 3302 Pacific Hy., San Diego 1, Calif. CD 4/6.

BUILDINGS—LB & CA

▲ **Oscar R. Wayman,** 3125 N.W. Front St., Portland, Ore., LB $4,234,828, 75 room HIGH SCHOOL, 82nd and Alameda St., PORTLAND, ORE. Multnomah School Dist. 1, 631 N.E. Clackamas St., Portland, Ore. Bids July 20. CD 6/22.

▲ **Gust K. Newberg Constr. Co.,** 2040 N. Ashland Ave., Chicago, Ill., LB, $19,647,000. Superior COURTS BLDG., First and Temple Sts., LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids July 19. (Correction—name of low bidder). CD 7/22, under LB.

▲ **Chemical & Industrial Corp.,** 256 McCullough St., Cincinnati, O., CA $16,000,000. fertilizer PLANT, RICHMOND, CALIF. California Spray Chemical Co. (Standard Oil Co.) Lucas St. and Ortho Way, Richmond 4, Calif. CD 7/19.

▲ **Williams & Burrows Inc.,** 500 Harbor Blvd., Belmont, Calif., Owner Builds, $3,500,000. SHOPPING CENTER, incl. 20 stores, WEST SACRAMENTO, CALIF.

CANADA

BUILDINGS—BA

▲ **Ont., Toronto**—WOMEN'S—BA 8/22—City, City Hall, 2 story, part bsmnt., 190x440 ft., steel women's bldg., Canadian National Exhibition, $3,000,000. Plans deposit $100. Page & Steele, 72 St. Clair Ave. W., archts. Hooper & Yolles, 111 Richmond St. W., engrs. CD 5/2, under Unclassified.

U. S. POSSESSIONS

HEAVY CONSTRUCTION—LB & CA

▲ **TERRITORY OF HAWAII**—Territorial Hy. Dpt. Office of Ben E. Nutter, hy. engr., Honolulu,
J. M. Tanaka, Honolulu, T. H., CA $1,979,060, build tunnel sect. of Nuuanu Pali Hy. Districts of Honolulu and Koolaupoko, Island of Oahu, FASP No. S 216 (5). Bids May 19. CD 3/28.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Ky., Newport**—Campbell County Water Dist., Fourth and York Sts., water plant, incl. mfg. treatment, standby and pumping facilities, $1,934,600.

▲ **Md., Rockville**—City, City Hall, filter plant, mains, 4 m.g. underground tank, altering present sys., to get water from Potomac River, $2,509,000, Gilbert Associates, consult engrs., Widener Bldg., Phila., Pa., made survey and recommended project.

▲ **Mich., Detroit**—City, Bd. Water Comrs., 735 Randolph St., Springwells Station, 8300 West Warren St., Dearborn, addns., imprvs. to water system pumping station. $35,000,000. Laurence G. Lenhardt, c/o owner, ch. engr. CD 11/11/48.

▲ **O., Lakeville**—Village, $1,285,000 bond election Nov. 8, water plant, mains, CD 2/28.

SEWERS, WASTE DISPOSAL

▲ Kan., El Dorado—City, City Hall, sewage disposal plant, incl. equip., $1,000,000. Black & Veatch, 4706 Broadway, Kansas City 12, Mo., consult. engrs. CD 7/19.

▲ Mich., Dearborn—Dearborn-Melvindale Disposal Auth., Dale H. Fillmore, chn., City Hall, incinerator and disposal plant, sewage treatment facilities, 12 acre site Butler and Greenfield Rd. $2,300,000, Dewitt M. Coburn, 13615 Michigan Ave., city engr. Bids in August. CD 3/19/54.

▲ Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 Blvd. and Market St., Zone 3, plans by Albert Osburg, 301 City Hall, 12 Blvd. and Market St., Zone 3 constr., equipping garbage-grinding plant addn. to present plant, 15 and Gratiot Sts., $275,000; constr., equipping bldg. for use as rubbish incinerator adjacent to foot of East Grand Ave., $1,875,000. Bids before Jan. 1. CD 6/7.

▲ O., Mansfield—City, $2,300,000 bond election Nov. 8, sewer and sewage disposal program, $12,000,000. CD 7/30/53.

▲ O., Zanesville—City, $2,000,000 bond election Nov. 8, sewage disposal plant. $4,500,000. CD 12/1/52.

Tex., Houston—Briargrove Land Co., c/o E. L. Phillips,

▲ Utah, Ogden—Central Weber Sewer Imprvt. Dist., Ogden, voted $5,800,000 bonds July 12, sewer lines and treatment plants. Gerix & Mueller, AO Bldg., Washington Terrace, consult. engrs. CD 3/24/54.

BRIDGES

▲ NEW YORK—Suffolk County Hy. Dpt., Riverhead, 1,216 ft. bascule lift span type bridge having approaches of rein.-con., 20 ft. vertical clearance when closed, connecting the mainland at Smith's Point with Fire Island across the narrows between Great South and Moriches Bays, Mastic Beach. $1,600,000. Albert Cass, county hy. engr. William Matsunaye, Jr., bridge engr.

▲ Tex., Houston—Harris Co., c/o Comrs. Court, Court House Bldg., rein.-con. type vehicle bridge crossing Ship Channel and about 12 mi. adjacent Freeway Road, $10,000,000.

▲ ONTARIO and NEW YORK—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. and Ogdensburg Bridge Auth., Ogdensburg, N. Y.

Prescott, Ont. to Ogdensburg, N. Y.—bridge across St. Lawrence River from Prescott to Ogdensburg. Bids in November.

STREETS AND ROADS

† MISSISSIPPI—National Park Service, Dpt. Interior, Wash. 25, D. C.,
grading, draining, stone base, structures, surfacing 9.1 mi., 9 bridges, 8 grade separations on Natchez Trace Parkway, $2,272,500.

▲ OHIO—State Hy. Dpt., Columbus,
Mahoning Co.—relocate West Federal St. Rte 422 from near Wirt St. to Robinwood Ave. incl. Cloverleaf at Division St. new service road at Oakland Ave., $1,750,000, Anthony S. Aurilio, 383 N. Phelps St., Youngstown, O. and Consoer, Townsend & Assoc., 351 E. Ohio St., Chicago, Ill., consult. engrs. CD 12/4/53.

▲ O., Cleveland—Comrs. Cuyahoga Co., Court House, $10,000,000 bond election Nov. 8, cross-county hy. from Bedford to Berea, $4,000,000. Albert S. Porter, Standard Bldg., Zone 14, co. engr., CD 4/1/55.

▲ O., Lorain—City, City Hall, $4,500,000 bond election Nov. 8, street, storm and sanitary sewer imprvs. CD 11/14/50.

▲ Tex., Beaumont—City, City Hall, repairing, surf. streets, $1,500,000; new paving on existing streets, $1,500,000.

▲† ALASKA—Alaska Road Comn., Dpt. Interior, Juneau, constr. Fairbanks-Nenana Rd., $500,000; imprv. Sterling Hy., $1,500,000; Richardson Hy., $2,400,000; Denali Hy., $1,700,000; Taylor Hy., $400,000. W. J. Niemi, c/o owner, ch. engr.

▲ Ont., Toronto—Municipality of Metropolitan Toronto, 67 Adelaide St., E., widening pavement on Dixon Side Road and Lawrence Ave. W. in suburban Etobicoke, $1,040,500. CD 3/23.

▲ Que., Montreal—City, City Hall, elevated expressway under study to run along Atwater Ave. from Canadian Pacific Ry. tracks to Lachkne Canal, $1,500,000. Lucien L'Allier, c/o owner, ch. engr.

EARTHWORK, WATERWAYS

▲† West Virginia—U. S. Eng., Huntington, Zone 18, dam and reservoir, Elk River, Sutton, $1,300,000. CD 6/17/43.

▲† Alaska—Alaska Road Comn., Dpt. Interior, Juneau, P. O. Box 500, Victoria, second stage Upper Campbell Lake Dam, to provide water storage for Ladore Falls and John Hart Developments, Vancouver Island to including increasing height of dam and generating equipment. $10,000,000. CD 3/9/54.

▲ Alaska—Chugach Electric Assn., Anchorage, hydro dam on Cooper Lake with 5,200 ft. tunnel and 12,000-kw power plant, $6,634,000. North Pacific Consultants, Anchorage, consult engrs. CD 7/27/54.

AIRPORTS

▲† O., Columbus—HOSPITAL—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., 92,000 sq. ft. hospital for Lockbourne Air Force Base near Grove City. $2,619,000.

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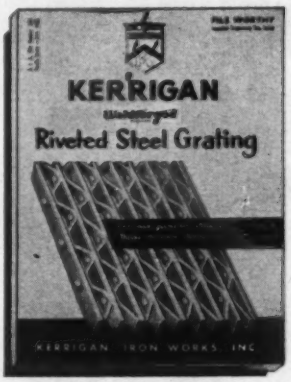

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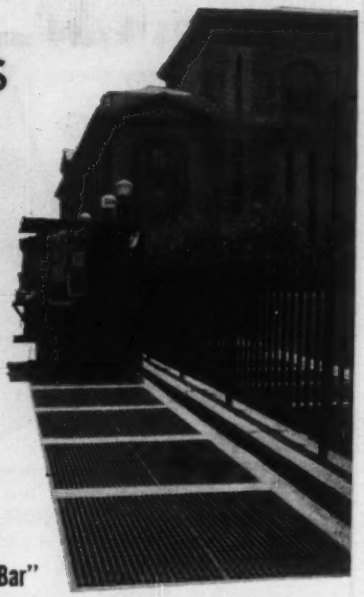

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LATIN AMERICA

▲ **Chile, Santiago**—FISHING INDUSTRY FACILITIES—Bengarten and Co. Ltd., Santiago, plans fishing industry facilities incl. huge freezing unit. $5,000,000.

▲ **Mexico, Minatitlan**—FACTORY—Fernando Pedelmaker & Assocs., Minatitlan, Vera Cruz, plans fertilizers factory. $1,360,000.

FOREIGN

▲ **China, Hongkong**—Ma Kam Chan, Hongkong, China, plans by Tsui-King-Chik, Hongkong, plans 24 story, 40,000 sq. ft. office, North Point. $1,000,000.

PUBLIC BUILDINGS

▲† **Ariz., Fort Huachuca** — BARRACKS, etc. — U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. plans by Scholar, Sakellar & Fuller, 2566 N. Campbell Ave., Tucson, 4 enlisted men's barracks, $1,900,000; regimental gymnasium, $360,000.

▲ **Calif., Berkeley** — PHYSICAL SCIENCE, etc. — University of California, Administration Bldg., physical science and mathematics statistics unit, Berkeley Campus. $1,270,000.

▲ **Calif., Los Angeles**—ENGINEERING, etc.—University of California, Administration Bldg., Berkeley, engineering, physical science unit, $3,300,000; life science graduate instruction unit, $1,495,000; library stacks addn. $750,000.

▲ **Calif., San Jose**—CITY HALL—City, City Hall, plans by Donald-Francis Haines, 144 W. San Carlos St., 140,000 sq. ft., rein.-con. city hall. $2,500,000. CD 10/16/44.

▲ **Calif., Stockton** — SCHOOL — Stockton City Unified School Dist., 324 N. San Joaquin St., plans by Mayo, Johnson & de Wolf, 307 Exchange Bldg., 2 Junior High Schools. $2,090,000. CD 12/15.

▲ **Calif., Whittier** — SCHOOLS — Whittier Union High School District, Whittier, $4,983,000 bond election Oct. 14, schools.

▲ **D. C., Wash.**—HOUSING—National Capitol Housing Auth., 1728 L St. N. W., plans by Denton & Duane, 1719 Eye St. N. W., Wash., D. C., 200-units, to be known as Stoddard Dwellings DC1 23, Ridge and Anacostia Rds. S. E. $2,184,600.

▲ **Ill., East St. Louis**—HOUSING—East St. Louis Housing Auth., J. E. Hays, exec. dir., 6 St. and Ohio Ave., multiple housing for area bounded by Broadway and Missouri Ave., 10 and 13 Sts. in downtown area. $2,000,000.

▲ **Ind., Anderson**—COURT HOUSE—Madison Co., Court House, plans by Arthur Henning, 514 Anderson Bank Bldg., court house. $1,000,000. CD 4/29.

▲ **Md., Towson**—COURT HOUSE—Comrs. Baltimore Co., Court House, plans by Gaudreau & Gaudreau, 330 N. Charles St., Baltimore, Zone 1, stone, concrete, steel, 72,000 sq. ft. court house wing addn. $1,300,000.

▲ **Minn., Minneapolis**—SCHOOL—Bd. Educ., 807 Broadway N.E., H. Held, architectural engr., plans by Thorshov & Cerny, 400 Metropolitan Bldg., Junior High School, 56 St., Irving Ave. S. and Sunrise Drive. $1,000,000. CD 5/11.

▲ **Mont., Bozeman**—HEALTH and PHYSICAL EDUCATION—State Bd. Educ., Capitol Bldg., Helena, health and physical education bldg., incl. offices, classrooms, swimming pool facilities, etc. $1,250,000.

▲ **O., Bryan**—SCHOOL—Bd. Educ., H. W. Rogge, supt., $1,175,000, bond election Nov. 8, high school and combined gymnasium-auditorium.

▲ **O., Cincinnati**—PARKING SITES—City, City Hall, develop six parking sites, Sixth and Elm Sts., $1,650,000; Fifth and Broadway, $804,000; Reading Rd. east of Broadway, $625,000; Ninth St. near Vine St., $1,490,000; Seventh and Sycamore Sts., $480,000; Third and Plum Sts., $531,000. DeLeuw Cather & Co., 150 N. Wacker St., Chicago, Ill., consult. engrs. T. J. Montgomery, city engr.

▲ **O., Conneaut**—SCHOOL—Bd. Educ., $1,500,000 bond election Nov. 8, addn. to Junior High School and bldgs. for elementary schools. Ward & Conrad, 266 Hanna Bldg., Cleveland, Zone 15, archts.

▲ **O., Dayton** — JUVENILE COURT CENTER — Comrs. Montgomery Co., Courthouse, $1,400,000 bond election Nov. 8, juvenile court center, $1,600,000. CD 11/5.

▲ **O., Fremont**—SCHOOL—Bd. Educ., $2,900,000 bond election Nov. 8, high school, remodel existing bldg. for Junior High School. CD 11/16/50.

▲ **O., Kettering**—SCHOOL—Bd. Educ., $2,500,000 bond election Nov. 8, high school at old Lefevre site between Shroyer Rd. and Far Hills Ave.; grade school on East Dorothy Lane near San Rae Dr., $1,950,000. CD 6/22.

▲ **O., Lakewood**—CITY HALL—City, 14532 Lake Ave., Zone 7, $1,500,000 bond election Nov. 8, city hall. Harlan F. Bartels, city engr.

▲ **O., Springfield**—SCHOOL—Springfield School Dist., 49 E. College Ave., $5,200,000 bond election Nov. 8, high school, 3 elementary schools, plus 8 other school addns. $4,630,000. CD 11/14/45.

▲ **O., Xenia**—SCHOOL—Bd. Educ., Xenia, $1,380,000 bond election Nov. 8, high school on site of Cox Athletic Field, $1,024,520; altering other schools, $355,480. CD 11/10/53.

Tex., Pasadena—CITY—City, Pasadena, bond election Sept. 3, city bldgs. $565,000. CD 12/3.

▲ **Tex., San Antonio**—SCHOOL—San Antonio Independent School Dist., Lavaca and Matagorda Sts., plans

(Continued on page 70)

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LOWEST PRICES! Many standard models of Dodge trucks are priced lower than all other makes! Yet with these low prices, quality-built Dodge trucks are dependable as ever.

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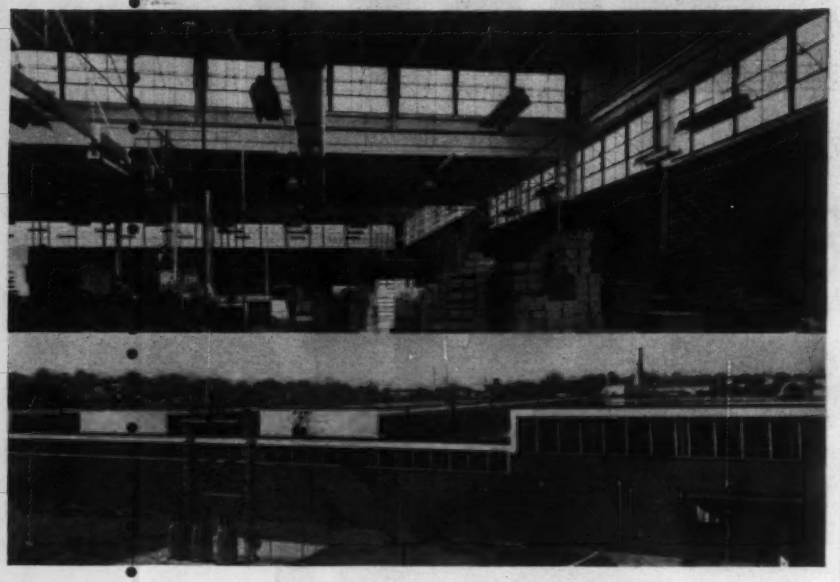

Moscowitz, Willmer & Millkey, Architect. J. A. Jones, Contractor.

Montag's New Paper Plant Keeps Bright and Comfortable Under 24,000 Sq. Ft. of Coolite

Montag, maker of fine stationery and school supplies for 65 years, recently occupied its new plant.

The Montag building covers 280,000 square feet and was designed to be the most modern stationery and school supply plant in the world. Conceived as an ideal plant for people and machines, it provides finest lighting, heating, humidity conditions and employee working and recreational facilities.

To achieve these aims, it is copiously daylighted with over 24,000 square feet of Coolite Glass by Mississippi. Coolite not only provides high levels of comfortable illumination, diffusing harsh sunlight for visual comfort . . . it absorbs much of the unwanted and uncomfortable solar heat rays, helps keep the vast interior cooler on brightest days.

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(Continued from page 68)

by Phelps & DeWees & Simmons, 342 W. Woodlawn St., Junior-Senior High School, Lions Park, Elgin and Hiawatha Sts., $1,750,000. Frank Drought, 342 W. Woodlawn St., consult. engr. CD 5/25.

▲ **Ont., Kingston**—FEDERAL PUBLIC—Dpt. P. Wks., Hunter Bldg., Ottawa, plans by Drever & Smith, 81 Brock St., federal public bldg., Clarence St. $1,000,000.

▲ **Ont., St. Catherines**—HOME FOR AGED—St. Catherines and Lincoln County Home for Aged, Municipal Bldg., plans by Mecbeth & Williams, 104 Queen St., 225-bed home for aged, 23-acre site, Twelve Mile Creek. $1,000,000. CD 6/18/51.

▲ **Ont., Windsor**—POST OFFICE—Dpt. P. Wks., Hunter Bldg., Ottawa, plans by Johnson-McWhinnie, 744 Ouellette Ave., 3 story, bsmnt., steel post office, Pitt St. W. $1,000,000.

COMMERCIAL BUILDINGS

▲ **Ala., Birmingham**—TELEPHONE EXCHANGE—Southern Bell Tel. & Tel. Co., 1706 2nd Ave. N., plans by Armistead & Saggus, 739 W. Peachtree St. N. E., Atlanta, Ga., 4 story telephone exchange. $1,000,000. Bids late fall.

▲ **Ariz., Scottsdale**—HOTEL—Frank J. Durham, c/o Camelback Inn, Lincoln Dr., Phoenix, 150-room resort hotel. $1,000,000.

▲ **Ariz., Scottsdale**—HOTEL—Westward Ho Junior Hotel Corp., Westward Ho Hotel, 618 N. Central Ave., Phoenix, 250-room resort hotel. $1,400,000.

▲ **Calif., Campbell**—SHOPPING CENTER, etc.—Owner, c/o Hollis Logue, archt., 275 N. 4 St., San Jose, shopping center incl. 24 stores, restaurant, supermarket, parking area. $2,000,000.

▲ **Calif., Los Angeles**—RESTAURANT—Harold Gelber, c/o Martin Stern, Jr., archt., 450 N. Beverly Dr., Beverly Hills, 2 story, 22,000 sq. ft. restaurant, 17000 Pacific Coast Hy. $1,000,000.

▲ **Calif., Palo Alto**—RESEARCH CENTER—Bd. Trustees Stanford University, Palo Alto, plans by J. E. Stanton & Wm. F. Stockwell, 627 S. Carondelet St., Los Angeles, 120,000 sq. ft., two rein.-con. buildings, research center, Menlo Park, $4,500,000.

▲ **Calif., Redwood City**—HOME SUBDIVISION—Sterling Building Co., 727 Shasta St., 900-home subdivision in Woodside and La Canada Rd. area, $20,000,000.

▲ **Conn., Hartford**—STORE—Owner, c/o Auburn Realty Inc., 252 Asylum St., Hartford, store project and parking facilities, $1,000,000.

▲ **Ky., Lexington**—SHOPPING CENTER—Osborn Real Estate Co., 217 E. High St., plans by Bill Martin 2042 Rainbow Drive, 1 story, 41x67 ft., concrete slab Zanedale Shopping Center, offices, paving, $1,000,000.

▲ **La., New Orleans**—CONVENT—Sisters of the Good Shepherd, Bienville and Broad Sts., convent, incl. central bldg. containing gymnasium, other recreational facilities, auditorium, classrooms, library, chapel, dining rooms, service facilities, infirmary, $1,300,000.

▲ **Minn., Bloomington** (P.O. Minneapolis)—HOTEL-MOTEL—O. B. McGuire, 2152 Carroll Ave., and W. C. McGuire, 54 Laurel Ave., South St. Paul, hotel-motel, 78 St. and 34 Ave. South, $1,000,000-$2,000,000.

▲ **Minn., Minneapolis**—HOSPITAL—Minneapolis Pediatrics Society, D. N. Beach, pres., Children's Hospital of Minneapolis, Mrs. Sheldon Hendrickson, pres., 2303 Pleasant Ave., plans by McEnary & Krafft, 510 McKnight Bldg., Minneapolis, and Ellerbe & Co., E. 505 First National Bldg., St. Paul, 4 story, children's hospital, Excelsoir Blvd. and Calhoun Blvd. $2,750,000.

▲ **Mo., Ladue (St. Louis 24 P. O.)**—CHURCH—Clayton Methodist Church, Lynn Meyer, chn. Bd. Trustees, Maryland and Bemiston Aves., Clayton, Zone 5, plans by Raymond E. Maritz, 721 Olive St., St. Louis, Zone 1, brick, stone church with wings to house Sunday School and fellowship hall, incl. indoor and outdoor recreational facilities, parking area at Lindberg Blvd. and Daniel Boone Hy. on 11½ acre tract, $1,000,000.

▲ **N. Y., New York**—HOSPITAL—Beth Abraham Home, 612 Allerton Ave., Zone 67, plans by Louis A. Abramson, 25 W. 45 St., Zone 19, altering hospital at site, $2,100,000.

▲ **N. Y., New York** — APARTMENT — Schnurmacher Bros. Inc., 1775 Broadway, Zone 6, apartment, Madison Ave. between 77 and 78 Sts. $1,000,000.

▲ **Pa., Folsom**—SHOPPING CENTER—Penn Fruit Co., Grand Ave. and Blue Grass Rd., Phila., shopping center, Fairview Rd. and MacDade Blvd. $3,500,000.

▲ **Pa., Phila.**—RESIDENTIAL DEVELOPMENT—Owner, c/o George Neff, archt., 1520 Locust St., residential development 225 units, Talbot Park Area, $2,500,000.

▲ **S. C., Columbia**—HOTEL—Affiliated National Hotels, 1201 Main St., Wade Hampton Hotel addn. $1,500,000. Construction in fall.

▲ **Tex., Dallas**—DORMITORIES—Southern Methodist University, Dallas, plans by Mark Lemmon, Bankers Mortgage Bldg., 3 to 4 story, 200-girl student dormitory, $750,000; plans by Geo. L. Dahl, 2101 N. St. Paul St., 3 to 4 story, masonry 300-male student dormitory. $1,000,000. CD 3/4/53.

▲ **Tex., Pasadena**—STORE—Sears Roebuck & Co., 4207 Main St., Houston, 178,220 sq. ft. masonry, steel mercantile retail store, on 17-acre tract between Main and Shaver Sts., $2,225,000.

▲ **Wash., Bellevue**—OFFICE—Puget Sound Power & Light Co., 7 and Olive Sts., Seattle, Zone 1, 3 story, bsmnt., 60x220 ft., rein.-con. office, $1,000,000.

(Continued on page 73)

ROAD BUILDING?

Get the jump on competition with this 5 1/2 yard Manitowoc 4500

FAST JOB-TO-JOB MOBILITY
FAST ON-THE-JOB ERECTION

INDIANA TOLL ROAD — Proof of Manitowoc's mobility and fast, economical erection on the job. Western Contracting Corporation of Sioux City, Iowa, unloaded and erected this 4500 in record time "between trains". Total unloading and erecting time was less than four days. Because of its narrow, low travel clearance and design, unit was shipped on a flat car without having to be completely dismantled. This 5 yard dragline with 140 ft. boom was assigned to excavate more than 200,000 yards of material.

BIG DIGGING CAPACITIES
FAST WORKING CYCLES

WEST VIRGINIA TURNPIKE — Latrobe Construction Co.'s 4500 Manitowoc shovel with 5½ yd. bucket moved 550,000 yards of rock in a 4-month period — averaging 6000 yards per eight-hour day, with performance reaching a maximum of 778 yards per hour in "well shot" rock.

More and more successful road building contractors across the country are making the Manitowoc 4500 the "big tool" on their big jobs. When you have big yardage to move — move it fast with a giant Manitowoc 4500. Only the "4500" has the perfect combination of big machine capacity and the mobility and fast, simple portability of small machines. It can be easily trailored from job-to-job or transported by flat car. On the job it can be erected in a matter of several days and is easily maneuvered from one location to another without trailing a cable. Handles big rock without picking or scratching. With one 4500 instead of several small machines, you cut down on the number of operators and oilers on the job. Get the edge on competition — give yourself a "break" on your next bid — figure on a Manitowoc 4500. Write Manitowoc Engineering Corp., Manitowoc, Wisconsin.

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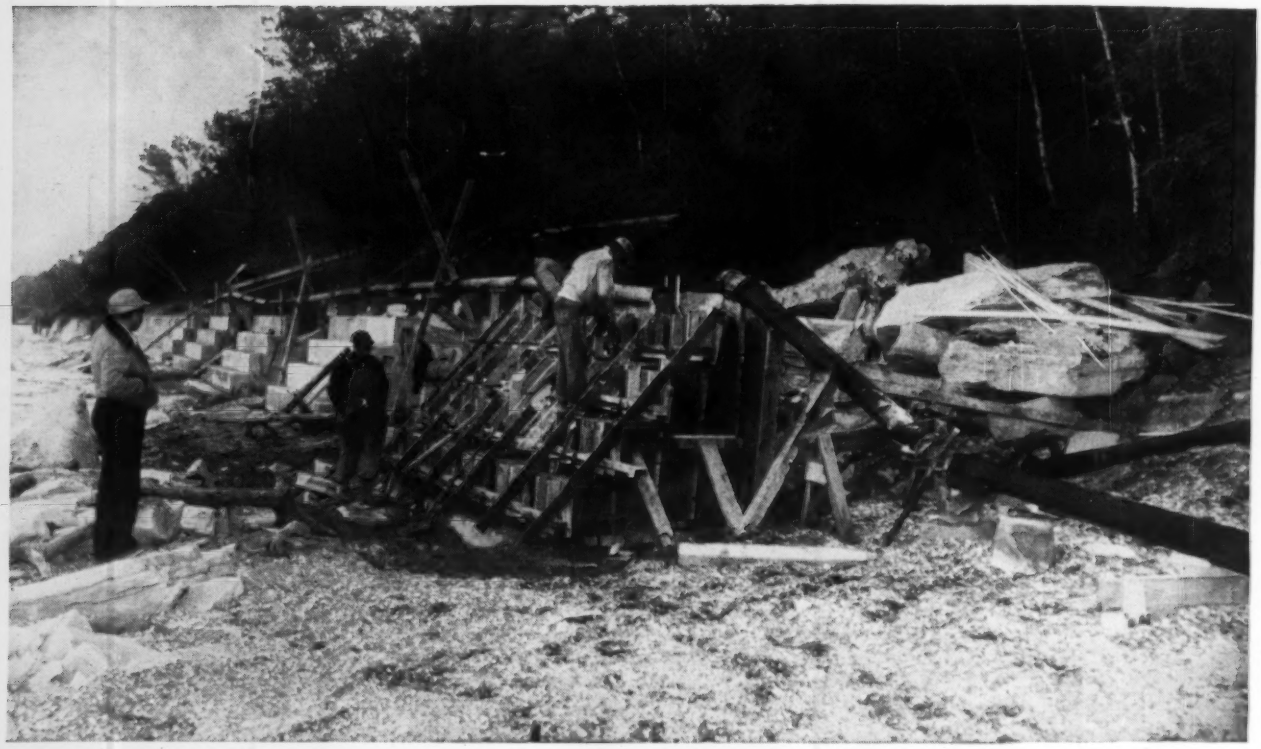

Laborers puddle and vibrate concrete with plenty of time to handle the pipe. Note pipeline lying above form for direct delivery of concrete and minimum pipe handling.

Pumpcrete was located 300 feet from work area, most convenient to truck mixer delivery.

Pipeline laying was simple through dense foliage on 30-degree slope.

PUMPCRETE® Saves 20% over original estimate on Lake Michigan retaining wall

Milwaukee contractor, Robert C. Tubesing saved 20% of original estimate on 500-foot retaining wall at the foot of Lake Michigan bluff, with rented Pumpcrete.

The 160 Single Pumpcrete was located just off the street convenient to truck mixers at the top of the bluff... 300 feet from the work area. Trucks were able to get in and out easily, deliver their loads fast and keep work on schedule.

Contractor Tubesing reported laying the pipeline down the 30-degree wooded slope was simple and inexpensive compared to access roads or chuting system. He also stated the unsegregated 2-inch to 3-inch slump delivered by Pumpcrete was far better than could have been expected by chutes.

Concrete placing on this job could only be done when offshore winds freed the work area of water. Concrete was placed in the 15- to 30-foot forms at the rate of 12-18 cubic yards per hour with a minimum crew—operator, working foreman and two laborers.

Why not consider the fast, cost-cutting possibilities of Pumpcrete for your next job? See your local Rex Distributor or write: Chain Belt Company, 4633 W. Greenfield Ave., Milwaukee 1, Wisconsin.

CONSTRUCTION REX® MACHINERY

CHAIN BELT COMPANY

(Continued from page 70)

▲ **Man., Winnipeg**—HOTEL—The Marlborough, c/o Libling & Michener, archts., 505-138 Portage Ave. E., 9 story hotel addn. $1,250,000.

▲ **Ont., Ottawa**—APARTMENT BLOCK—Owner, c/o The Toronto General Trusts Corp., Sparks and Elgin Sts., 100-suite, 100x150 ft., apartment block, Metcalfe and Frank Sts. $1,000,000.

▲ **Ont., Ottawa**—HOUSE DEVELOPMENT, etc.—Parkway Lands Ottawa Ltd., 276 Laurier Ave. W., house development and small shopping center in West End-Baseline Rd., west of Woodroffe Ave. and proposed Queensway. $10,000,000.

▲ **Que., Montreal**—HOSPITAL—Bd. Governors St. Mary's Hospital, 3830 Lacombe Ave., Montreal, plans by Edward J. Turcotte, 1478 St. Catherine St. W., new home for Sisters, nurses' residence addn. and other hospital extensions. $2,000,000. Agnew, Craig & Peckham, 200 St. Clair St. W., Toronto, Ont., consult. engrs.

INDUSTRIAL BUILDINGS

▲ **Ind., Mount Vernon**—REFINERY IMPRVS., etc.—Indiana Farm Bureau Co-operative, 47 S. Pennsylvania St., Indianapolis, refinery imprvs., new pipe lines, water treating unit and new storage tanks. $2,000,000.

▲ **Minn., Golden Valley (Minneapolis P.O.)**—RESEARCH LABORATORIES—General Mills, Inc., C. H. Bell, pres., 402 Second Ave. South, Minneapolis, expanded research laboratories on site E of County Road 18 and north of Plymouth Ave., 8 to 12 bldgs. to be erected over 3 to 5 year period; first bldg., 63,000 sq. ft. research structure. $2,000,000.

▲ **O., Brooklyn**—PLANT and OFFICE—Lamson & Sessions Co., 1971 W. 85 St., Cleveland, plans by George S. Rider Co., Terminal Tower, Cleveland, 1 and 2 story, brick, steel 500,000 sq. ft. plant and office, $4,500,000.

▲ **O., Cincinnati** — PARKING STRUCTURES — Pigeon Hole Parking Co., 230 W. Commerce St., Youngstown, c/o Wynne Evans, 13 E. Eighth St., Cincinnati, 12 automatic multilevel parking structures, various locations, $1,875,000; automatic multi-level parking garage for 80 units at Ninth and Race Sts., $100,000. Bids in August.

▲ **O., Columbia Park** — PLANT — E. I. duPont de Nemours & Co., duPont Bldg., Wilmington, Del., commercial products mfg. plant on Ohio River, 25 acre site, $3,000,000. Bids in November or December.

▲ **Pa., Reesdale**—GENERATING STATION—West Penn Power Co., 14 Wood St., Pittsburgh, Pa., generating station 10 mi. north of Kittanning along west bank of Allegheny River. $25,000,000.

▲ **Tenn., Nashville**—PLANT—Ferro Corp., 4150 E. 56 St., Cleveland, O., fiber glass plant addns. $1,500,000.

▲ **Tenn., Nashville**—PLANT—Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., glass mfg. plant, $10,000,000. Giffels & Vallett, Inc., 1000 Marquette Bldg., Detroit, Mich., structural engr. Toledo Eng. Co., 3001 Sylvania St., Toledo, O., furnace engr. J. A. Macalarny, engr., c/o Ford Motor Co., Detroit, Mich. CD 7/19.

▲ **Ont., Toronto**—PLANT—National Gypsum Co., 325 Delaware Ave., Buffalo, N. Y., gypsum and plaster plant, $5,000,000.

▲ **Que., Montreal**—PLANT—National Gypsum Co., 325 Delaware Ave., Buffalo, N. Y., gypsum and plaster plant. $5,000,000.

UNCLASSIFIED

▲ **Minn., St. Paul**—CLASSIFICATION YARD—The Milwaukee Road (Chicago, Milwaukee, St. Paul & Pacific R. R. Co., W. G. Powrie, ch. engr., Union Station, Chicago 6, Ill.), constr. electronically operated freight-car classification yard, incl. 35 classification tracks, freight-car repair facilities and new facility for icing refrigerator cars, $5,000,000.

▲† **Tennessee**—PARK ROADS—National Park Service, Dpt. Interior, Interior Bldg., 19 and C Sts. N. W., Wash. 25, D. C. grading, draining, stone base, structures and tunnel 2.79 mi. Foothills Parkway. $1,073,800.

▲ **Texas**—CRUDE OIL LINES—Pasotex Pipe Line Co., City Natl. Bank Bldg., Houston (Standard Oil Co., parent owner), 125 mi. addnl. crude oil lines to be converted from various-sized existing pipes to straight 20 in. pipe; line to come from fields in areas between Wink and El Paso destined to feed a large refinery at El Paso, $15,000,000; 70 mi. 20 in. crude oil line running from vicinity of Wink to El Paso, $7,500,000.

▲† **Virginia and North Carolina**—PARK ROADS—National Park service, Dpt. Interior, Interior Bldg., 19 and C Sts. N. W., Wash. 25, D. C., grading, stone base, constr. tunnel, etc. 10.2 mi. roadway Blue Ridge Parkway past Grandfather Mtn. in N. C. and extending from Sandy Flat Gap to Beacon Heights, $3,008,800; other imprvs. on Blue Ridge Parkway, $228,100.

▲† **Virginia**—PARK BUILDINGS—National Park Service, Dpt. Interior, Interior Bldg., 19 and C Sts. N. W., Wash. 25, D. C. Colonial National Park buildings and utilities at Yorktown and Jamestown. $1,250,000. CD 2/23/54, under Va., Yorktown.

▲† **Virginia**—PARK ROADS—National Park Service, Dpt. Interior, Interior Bldg., 19 and C Sts. N. W., Wash. 25, D. C. completing Colonial Parkway between Williamsburg and Jamestown. $1,833,800.

▲† **Washington**—PARK ROADS—National Park Service, Dpt. Interior, Interior Bldg., 19 and C Sts. N. W., Wash. 25, D. C., Olympic National Park, completing Heart O' the Hills Rd. $1,063,600; roads, bridges, parking areas, $122,300.

MIL-CARB*

Carburized WASHERS are an important part of the Picture, too!

*TRADE-MARK

Steel framing, University of Illinois Research Hospital, Chicago, employing high tensile steel bolts and MIL-CARB Washers. Erectors: Allied Structural Steel Co., Chicago.

In the selection of the most desirable materials for this installation, the Allied Structural Steel Co., as erectors, specified high quality bolt assembly units, with the result that **Gary Screw and Bolt Division of Pittsburgh Screw and Bolt Corporation** supplied MIL-CARB Washers to be used with their High Tensile Strength bolts and nuts.

MIL-CARB Washers were a logical choice for this important bolted steel structure, as in many other major projects, because of the inherent characteristics of the steel and heat treatment employed in the fabrication of these washers. Prime Carburizing Quality Special Soundness Steel is used to insure uniform quality control — always equal to the rigid specifications for this form of steel assembly (ASTM Designation A325, applying to bolts, nuts and washers).

Both nuts and washers must meet a proof load equivalent to the ultimate load of the bolts and it is on this basis that MIL-CARB Carburized Washers are today winning dominant preference in the structural steel building field.

It is axiomatic that no bolt assembly is any better than its washers. And it is because MIL-CARB Washers overcome inherent weaknesses often present in heat-treated washers fabricated from steel of questionable quality that it pays to specify:

MIL-CARB Carburized Washers for uniformly sound construction.

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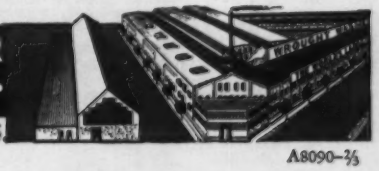


A8090-3/5

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

August 16 Massachusetts

▲† **Connecticut**—AAA FACILITIES—BA On Or About 8/23—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., Special AAA Facilities, East Windsor, Manchester, Glastonbury and Crowell-Middletown, ENG-19-016-54-4, $2,500,000-$3,000,000, Plans deposit $50. Extended date. CD 7/26.

HEAVY CONSTRUCTION—LB & CA

▲† **Morrison-Knudsen Landers Griffin Co.,** Gosling Rd., Portsmouth, N. H., LB **$1,072,911,** Group 1; LB **$1,071,890,** Group 2, storage facilities for ordnance storage area, Portsmouth Air Force Base, ENG-19-016-56-6, PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass. Bids July 26. CD 7/19.

▲ **Central Vermont Public Service Corp.,** 121 West St., Rutland, Vt., rejected bids June 21, hydro-electric development, Lamoille River, East Georgia, VERMONT. Est. **$2,000,000.** Project postponed.

BUILDINGS—LB & CA

▲ **Joseph Rugo, Inc.,** 581 Boylston St., Boston, Mass. LB **$2,023,000.** HIGH SCHOOL, West Main St., HYANNIS, MASS. Town of Barnstable, Town Office Bldg., 397 Main St., Hyannis, Mass. Bids July 21. CD 6/24.

▲ **Turner Constr. Co.,** 420 Lexington Ave., New York 17, N. Y. CA Est. **$5,000,000.** 5 story home OFFICE, 31 acre tract on Lincoln St., WORCESTER, MASS. State Mutual Life Assurance Co., 340 Main St., Worcester, Mass. Bids July 11. CD 6/22.

▲ **John Zandonella,** 70 Chase St., Bridgeport, Conn., LB **$1,432,000.** 6 SCHOOL addns., MILFORD, CONN. Town, Town Hall, Milford, Conn. Bids July 26. CD 7/6.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 25 New York

STREETS AND ROADS

August 11, 18 New Jersey August 25 New York

New Jersey and Pennsylvania—BA 8/18—New Jersey Turnpike Auth. & Penn. Turnpike Comn., Administration Bldg., New Brunswick, N. J.,
Burlington Co.—grading, paving and drainage in connection with relocation of 1,000 ft River Rd. near Pier 21 of new Delaware River Turnpike Bridge, Burlington Twp., Contract No. PN 5. Plans deposit $5.

▲ **Md., Baltimore** — PIER — BA 8/24 — Bd. Estimate, City of Baltimore, pier addns. and imprvs. McComas St. Terminal, for Western Maryland Ry. Co., F. L. Etchison ch. engr., Standard Oil Bldg., Baltimore, Md. Total est. $5,000,000-$6,000,000. Plans deposit $25. CD 8/11/53.

▲† **New York**—SPECIAL AAA FACILITIES—BA 8/31—U. S. Eng., 111 E. 16 St., New York, Zone 3, Special AAA Facilities, Hamburg, ENG-30-075-56-6. $1,000,000-$2,000,000. Plans deposit $100. CD 6/14, under LB.

BUILDINGS—BA

▲ **N. J., Franklin Lakes**—SCHOOL—BA 8/16—Bd. Educ., Ramapo Regional High School Dist., James Heath, pres., School Bldg., Franklin Lakes, high school, Areas 1, 2, and 3. $1,200,000. Plans deposit $100 (2 sets). Sherwood, Mills & Smith, 65 Broad St., Stamford, Conn., archts. Fraioli Blum & Yesselman, 25 W. 45 St., New York, N. Y., consult engr. Muzillo of Tizian, 202 W. 44 St., New York, N. Y., mech engrs.

BUILDINGS—SLC

▲ **N. J., Florence**—PLANT—National Gypsum Co., 325 Delaware Ave., Buffalo, N. Y., soon lets contract gypsum plant, $1,000,000. S. D. Skinner, 325 Delaware Ave., Buffalo, N. Y., engr.

▲ **N. Y., Brooklyn**—SCHOOL—R. C. Parish of St. Thomas Aquinas, 1550 Hendrickson St., soon lets contract 3 story parochial school and residence for brothers, 1992-2024 Flatbush Ave. $1,000,000. Robert J. Reiley, 45 W. 45 St., New York, Zone 19, archt. Severud-Elstad-Krueger, 415 Lexington Ave., New York, Zone 17, engrs. CD 2/2.

HEAVY CONSTRUCTION—LB & CA

▲ **Gull Contg. Co., Inc.,** 33-15 Lawrence St., Flushing, N. Y. LB **$1,717,627.** Contr. LT 160.020, Lincoln Tunnel third tube N. Y. approach section No. 2, NEW YORK. Port of New York Authority, 111 8th Ave., New York 11, N. Y. Bids July 19. CD 6/14.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg,
Phoenix Bridge Co., Phoenixville, Pa. LB **$2,501,454,** superstructures of Clarks Summit Bridge (Sec. 37M) and Lackawanna River Bridge (Sec. 37 JK), Lackawanna Co. Bids July 27. CD 7/8.

BUILDINGS—LB & CA

Waxman Bros., c/o Morris Rothstein & Son, archts., 186 Joralemon St., Brooklyn 2, N. Y. Owner Builds. Est. **$950,000.** 6 story APARTMENT, 825 Ocean Parkway at E. 7 St., BROOKLYN, N. Y.

▲ **Serody & Serody,** 2272 E. Mt. Carmel Ave., Glenside, Pa., Separate Contracts, **$4,564,000.** RESIDENTIAL DEVELOPMENT, Evesham Rd., ASHLAND, N. J. Lester H. Weckesser, Erlton, N. J., archt.

▲ **B. J. Lucarelli & Co.,** 22 Orchard St., Jersey City, N. J., CA **$1,464,505.** Junior High SCHOOL, BURLINGTON, N. J. Bd. Educ., Burlington, N. J. Bids June 22. CD 6/29.

William Martin, c/o Erein Gerber & A. Pancani, archts., 1180 Raymond Blvd., Newark, N. J. Owner Builds. **$850,000.** 106-family APARTMENT BLDGS., Ocean and Bath Aves., LONG BRANCH, N. J.

Twin Brook Estates, c/o Alexander Summer Co., 790 Queen Anne Rd., Teaneck, N. J. Owner Builds. **$950,000.** 43 HOUSES on tract at Forest Drive and River Rd., RIVER VALE, N. J.

O. A. Peterson Constr. Co., 79 Willow St., Montclair, N. J. CA, **$805,981** (8 bidders) HIGH SCHOOL, Fairview and Grove Aves., VERONA, N. J. Bd. Educ., Verona, N. J. Bids June 15. (**Correction**—contractor). CD 7/5, under CA.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲ **FLORIDA**—State Road Dpt., Tallahassee,
Marion Constr. Co., Box 577, Ocala, Fla., CA, **$1,235,025.** rock base with b. conc., binder course, small drainage structures, 2 concrete box culverts, 1 bridge 15.562 mi. State Rd. 5, Job 7802-275 and 7207-209, Proj. F 003-6 (4) and F-003-7 (9), St. John and Duval Counties. Bids June 23, awarded July 26. CD 6/28, under LB.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,
Ky.—**Ralph E. Mills Co.,** 410 Ann St., Frankfort, Ky. CA **$529,677.** b. conc. Class I base, surf. and traffic bound limestone 6.578 mi. Central City-Russellville Rd., F 545 (1), SP 89-23, Muhlenberg Co.;
Ky.—**W. C. Snider & Geoghegan & Mathis,** Bardstown, Ky. CA **$667,705.** b. conc. Class I surf., bit. macad. surf. (penetration type) 5.35 mi., Lancaster-Stamford (US 27) Rd., F 525 (6), SP 40-66, SP 69-30, Garrard and Lincoln Counties;
Ky.—**Harry O. Wyse,** Versailles Pike, Rte. 2, Lexington, Ky. CA **$1,087,714.** b. conc. surf. 0.449 mi. Inter Belt Line Rd., U 528 (20), UG 528 (20), SP 56-898, Jefferson Co. Grand total $2,285,096. CD 7/25, under LB.

BUILDINGS—LB & CA

English Constr. Co., Alta Vista, Va., CA **$916,582,** est. $800,000. consolidated HIGH SCHOOL, DAYTON, VA., Country School Bd., Harrisonburg, Va. Bids July 12. CD 7/19.

▲† **J. M. Brown Constr. Co.,** 1012 Spring St., Shreveport, La. CA **$1,178,000.** Veterans Admin. HOSPITAL addn., alteration, conversion, ALEXANDRIA, LA. Veterans Admin., Munitions Bldg., Wash., D. C. CD 6/23, under LB.

▲ **LeChase Constr. Co.,** 29 Saratoga Ave., Rochester, N. Y. CA Approx. **$1,000,000.** Shively Plaza SHOPPING CENTER, incl. 30 stores, 200,000 sq. ft. sales area, parking lot, SHIVELY (BR. LOUISVILLE), KY. Jacob Gross, Inc., Ralph Birnbaum, pres., 25 Exchange St., Rochester, N. Y. Sidney H. Morris & Assoc., 134 N. LaSalle St., Chicago, Ill., archts.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 9 Illinois August 23 Ohio

STREETS AND ROADS

August 9 Illinois August 23 Ohio

BUILDINGS—BA

▲ **O., Cleveland**—OUT-PATIENT—BA 8/18—City, Dpt. Health & Welfare, City Hall, Zone 14, 5 story outpatient dept. bldg. and pertinent facilities, $3,500,000. Plans deposit $100, Small, Smith & Reeb, 1010 Euclid. Ave., Zone 15, archts. CD 6/24.

▲ **Wis., Milwaukee**—SCHOOL—BA 8/25—Bd. School Directors, 1111 N. 10 St., Center-Pierce Street School, $2,000,000. Gates, Weiss & Kramer, 611 N. Broadway, archts. CD 5/17/54.

▲ **Mich., Detroit**—GARAGE—BA About 10/20—City, Municipal Parking Auth., 1214 Griswold St., 3-level garage First and Abbott Sts. $1,328,000. William H. O'Dell, 515 Hammond Bldg., archt. CD 4/21.

HEAVY CONSTRUCTION—LB & CA

▲ **James Stewart Co.,** 600 W. Jackson Blvd., Chicago 6, Ill., CA, **$11,654,900.** two 6,500,000 bu. grain elevators in connection with conversion of Lake Calumet area to Port District, CHICAGO, ILL. Chicago Regional Port Dist., 160 N. La Salle St., Chicago 1, Ill. Grand total $17,766,853. Bids June 30, awarded July 21. CD 7/7, under LB;
A. L. Jackson Co., 300 W. Washington St., Chicago 6, Ill., CA **$2,717,590,** 3 transit sheds (Chicago, Ill.);
Great Lakes Dredge & Dock Co., 228 N. La Salle St., Chicago 1, Ill., CA, **$1,694,363,** harbor facilities, 5,595 ft. steel sheet pile dockage wall (Chicago, Ill.);
Krug Excavating Co., 11835 Central Park Ave., Blue Island, Ill., and **Charles J. Wilson Co.,** 7601 Wentworth St., Chicago, Ill., CA, **$1,700,000,** grading, site preparation (Chicago, Ill.).

▲ **S. N. Nielsen,** 3059 Augusta Blvd., Chicago, Ill., LB **$1,425,500.** sewage treatment plant, JOLIET, ILL. City, Joliet, Ill. Bids July 19. CD 7/14;
Permanent Constr. Co., 208 S. La Salle St., Chicago 4, Ill., LB, **$424,819,** intercepting sewers (Joliet, Ill.).

▲† **Klug & Smith Co.,** 4425 W. Mitchell St., Milwaukee, Wis., CA, **$1,066,969.** misc. buildings, etc., M-54, Town of Franklin, Milwaukee Co., ENG-11-032-55-64, WISCONSIN. U. S. Eng., 475 Merchandise Mart, Chicago, Ill. Bids July 8. CD 7/15, under LB.

† **Mayfair Constr. Co.,** 5660 N. Kedzie St., Chicago, Ill., CA, **$864,815,** est. $881,538 (4 bidders), misc. buildings, structures, related work Brown Deer, Milwaukee Co., No. 11-032-55-62, Site M-02, WISCONSIN. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. CD 6/16.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,
Mich.—**Julius Porath & Sons,** 432 Lafayette Bldg., Detroit, Mich. and **Louis Garavaglia,** 24240 Mound Rd., Center Line, Mich. LB **$2,173,407,** est. $2,340,000, (9 bidders) 9 in. dual c. conc. paving M-17 from Jackson Ave. to US-112, F1 81-67 C5-R, F1 81-67 C6-U (F 426 2), F1 81-7 C16-R (F-392 7), Washtenaw Co.;
Mich.—**Denton Constr. Co.,** 20415 Mack Ave., Grosse Point Mich. and **Sugden & Sivier,** 13100 Cloverdale St., Oak Park, Mich. LB **$737,961,** est. $830,000. (6 bidders) c. conc. John C. Lodge Expressway and service roads between Dexter Ave. and Linwood Ave., UI 82-128 C17 (UI 404 96), Wayne Co.
Mich.—**Sargent Constr. Co.,** 2840 Bay Rd., Saginaw, Mich. LB **$954,361,** est. $1,040,000. (8 bidders) 9 in. uniform c. conc. M-15 from Columbus Ave. Bay City southeast to M-138, F 9-15 C7-U, F 9-15 C8-R (F 239 8), Bay Co.; LB **$82,817,** est. $90,000. (5 bidders) bit. binder wid'n., 42 ft. bit. con. US-10 and US-23 from 0.3 mi. northwest Vienna Rd. to M-83 F 25-23 C6-R (F 150 10), Genesee Co.;
Mich.—**L. W. Edison Co.,** 924 Floral Dr. S.E., Grand Rapids, Mich. LB **$790,709,** est. $820,000. (5 bidders) 9 in. uniform c. conc. 11.5 mi. US-131, F 41-90 C4-R (F 116 4), F 41-90 C5-R (F 132 13), Kent Co.;
Mich.—**Cooke Contg. Co.,** 1116 Penobscot Bldg., Detroit, Mich. LB **$143,694,** est. $150,000. (4 bidders) bit. aggregate surf. course Palms, Mayer Range and Vincent Rds., total 8.37 mi. CS 77-81 C1 (S 59 5), CS 77-32 C1 (S 1225 1), CS 77-83-C1 (S 826 1),, CS 77-84 C1 (S 1223 2), S 311-17-55, St. Clair Co.;
Mich.—**Detroit Asphalt Paving Co.,** 432 Lafayette Bldg., Detroit 26, Mich. LB **$305,251,** est. $310,000. (5 bidders) b. conc. 9.16 mi. US-24, US-25 and M-151, M 58-2 C-26-R, M 58-25 C9-R, M 58-5 C2-R, Monroe Co.;
Mich.—**Max R. Frisinger Co.,** 5804 W. Michigan St., Ann Arbor, Mich. LB **$132,621,** est. $110,000 (4 bidders) 8 in. c. conc. paving 40 ft. wide 0.483 mi. M-25 from Sebewaing to Pine Sts., F 32-18 C3 (F 135 13), Huron Co.;
Mich.—**Hodgkiss & Douma,** Petoskey, Mich. LB **$73,395,** est. $70,000. (6 bidders). c. conc. base wid'n., bit. aggregate surf. 0.372 mi. M-68 from Maple to Second St., F 71-4 C5-U (F 296 4), Presque Isle Co.
Mich.—**Otis Klett,** Hartford, Mich. LB **$114,736.** (A) **MacLean Constr. Co.,** 706 Sheridan St., Lansing, Mich. LB **$119,715** (B) Est. $130,000. (7 bidders) 21 ft. aggregate surf. 4.032 mi. FAS Rte. NC 5 from south of Keeler north, CS 80-44-C2 (S 538 1), Van Buren Co.;
Mich.—**W. H. Knapp Co.,** Monroe, Mich. LB **$235,694.** est. $220,000. (4 bidders) c. conc., b. conc. 1.026 mi. M-57 from west of Carson City to 129 ft. east of east limits of Carson City, SS 59-41 C6-U (S 219 5), Montcalm Co.; LB **$186,925,** est. $170,000 (5 bidders) 22 ft. c. conc. 0.994 mi. M-37, F 13-13 C4-U, F 13-13 C5-R (F 202 4), Calhoun Co.;
Mich.—**A. S. Leffler Grand Co.,** Davison, Mich. LB **$264,160,** est. $270,000. grading, drainage structures 3.811 mi. US-27, F 19-24 C6, RN (F 168 12), F 19-24 C5-RN (F 124 2), F 29-17 C8-RN (F 168 12), Clinton and Gratiot Counties;
Mich.—**Michigan Colprovia and Grand Rapids Asphalt Paving Co.,** 2020 Chicago Dr. S.W., Grand Rapids, Mich. LB **$229,263,** est. $240,000. (6 bidders b. conc. 7.958. mi. US-16, M-50, US-131, M-21, M 41-33 C6-R, M 41-34 C7-R, M 41-35 C12-U, M 41-35 C13-R, M 41-35 C13-R, M 41-13-13 C1 M., 70-501 C3, Kent and Ottawa Counties;
Mich.—**Pierson Contg. Co. & Louis Garavaglia,** 24240 Mound Rd., Center Line, Mich. LB **$711,221,** est. $670,000. (7 bidders) dual 22 ft. c. conc. 2.917 mi. M-60, also grading concrete base wid'n. US-31, F 11-73 C1, F 11-73 C2 (F 427 3), Berrien Co.;
Mich.—**Sugden & Sivier, Inc.,** 13100 Cloverdale St., Oak Park, Mich. LB **$123,256,** est. $150,000. (10 bidders) grading 0.796 mi. Edward N. Hines Dr. from Telegraph Rd. to Outer Drive, CS 82-229-C1 (S 173 14), Wayne Co.;
Mich.—**John G. Yerington Co.,** Battle Creek, Mich. LB **$99,636,** est. $100,000 (3 bidders) 22 ft. bit. aggregate surf. 5.478 mi. Hager Rd. from M-140 to US-31, CS 11-84 C1 (S 819 1), Berrien Co. Bids July 20. CD 7/13.

BUILDINGS—LB & CA

▲ **Freeman Constr. Co.,** Wooster, O. LB **$1,344,800.** general contract 2 dormitories at Kent State University, KENT, O. State Dpt. P. Wks., State Dpts. Bldg., Columbus, O. CD 10/13.

▲ **A. J. Glaser Co., Inc.**, 401 S. Lincoln St., Muncie, Ind., CA $4,000,000. INDUSTRIAL PLANT, CONNERSVILLE, IND. Philco Corp., 445 E. Tioga St., Phila., Pa. CD 1/9/53.

▲ **Sedler Constr. Co.**, 9553 S. Hamilton St., Chicago, Ill., Own Forces, $1,600,000. 100 HOMES, area of Central Park Ave. and 115 St., CHICAGO, ILL. John Bartolomeo, 10836 S. Western St., Chicago, Ill., archt.

▲ **M. H. Wolfe Constr. Co.**, 2201 Adams St. Granite City, Ill., CA, $1,350,000. 176 brick, concrete RESIDENCES, on tract fronting 1300 ft. on Johnson Rd. and Garfield Ave. in Maryland Heights section, GRANITE CITY, ILL. Holiday Development Co., c/o Miller-Wolfe Realty Co., 3226 Nameoki Rd., Granite City, Ill.

▲ **Ross & Co.**, 5517 Montrose St., Chicago, Ill., Own Forces, $2,500,000. 120 HOMES, HILLSIDE, ILL. A. J. del Bianco, 5501 Irving Park Rd., Chicago, archt.

▲ **Hill & Shay**, 110 N. Waller St., Chicago, Ill., CA, $1,000,000. 70 HOMES, along Harlem Ave. and Schirmer St., MORTON GROVE, ILL. Moderate Cost Homes Constr., 5847 W. Touhy St., Chicago, Ill. A. J. del Bianco, 5501 Irving Park Rd., Chicago, Ill., archt.

▲ **Clark Constr. Co.**, 750 Greenview St., Itasca, Ill., Own Forces, $1,200,000. 60 HOMES, NORTHBROOK, ILL.

▲ **Duri Built Homes**, 4517 Oakton St., Skokie, Ill., Own Forces, $1,300,000. 50 HOMES, SKOKIE, ILL Emil J. Minx, c/o owner, engr.

▲ **Hunzinger Constr. Co.**, 4577 N. 124 St., Milwaukee, Wis., CA $3,000,000, Cement PLANT, MILWAUKEE, WIS. Universal Atlas Cement Co., 712 W. Canal St., Milwaukee, Wis. CD 12/8.

▲ **James McHugh Constr. Co.**, 6449 S. South Park Ave., Chicago, Ill., CA $1,809,500, general contract first unit of WAR MEMORIAL, MILWAUKEE, WIS. Milwaukee County Park Comn., Court House, Milwaukee, Wis. Bids May 5. CD 5/10, under LB.

▲ **C. H. Reisdorf & Son**, 9353 Freeland St., Detroit, Mich. LB $1,244,947. 3 story, penthouse addn. to STATE HALL, Wayne University, DETROIT, MICH. City, Bd. Educ., 1354 Broadway, Detroit, Mich. Bids June 22. CD 6/6.

▲ **Darin & Armstrong, Inc.**, 2041 Fenkell St., Detroit, Mich. CA Est. $25,000,000. 1,300,000 sq. ft. Chassis Parts PLANT, 17 Mile Rd. and Mound Rd., STERLING, MICH. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich. Bids July 7. CD 6/21.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲ **Tex., Amarillo**—BA 8/23—City, N. V. Moss, mgr. 22 mi. 42 in. steel cylinder concrete pipe for water supply lines, $1,800,000. Plans deposit $15. Freese & Nicols, 407 Danciger Bldg., Ft. Worth, engrs. CD 3/14.

▲ **Texas**—GAS MAINS, etc.—Bids Asked—Wilcox Trend Gathering System, c/o Harry W. Bass, Magnolia Bldg., Dallas, 75-hp. field compressor station and some gas lines, near Cuero, $200,000; 22,000 addnl. hp. compressor station units, Cuero-Thompson, $1,220,000; 16 mi. natural gas mains, near Cuero, $480,000; 2,000 hp. compressor station, Charco, near Cuero, $1,000,000. CD 4/11.

BUILDINGS—BA

▲† **Tex., San Marcos**—HOUSING—BA 8/15—Gary Air Force Base, c/o Floyd A. Henderson, Contg. Officer, San Marcos, 100-unit housing, Gary Air Force Base $1,250,000. Plans deposit $30. Extended date. CD 7/21.

▲ **Iowa, Cedar Rapids**—SCHOOLS—BA 8/16—Bd. Educ., 346 2 Ave. S.W., Thomas Jefferson High School and George Washington High School. $5,950,000. Extended date. L. A. Daly Co., Insurance Bldg., Omaha, Neb., archt. CD 6/29.

BUILDINGS—SLC

▲ **Tex., Dallas**—RETAIL SHOPS, OFFICE—Exchange Park, c/o Wm. A. Blakley & Assocs., Guardian Life Bldg., Dallas, soon lets contract retail shops, $2,000,000, CD 7/26; Office No. 1, $3,500,000. CD 7/13.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,

Minn.—**Brown & Leguil, Mankato**, Minn. CA $1,015,823. grav. base, road-mixed bit. surf. 4.9 mi. at Hibbing, St. Louis Co.;

Minn.—**Mann Constr. Co.**, Red Wing, Minn. CA $554,752. grade 7.9 mi. easterly from point 4 mi. east of Jct. TH 52 in Cannon Falls, Goodhue Co.;

Minn.—**McLean-Astleford Co.**, 7701 Harriet Ave., Minneapolis, Minn. CA $574,554. grav. base, road-mixed bit. surf. 3.3 mi. westerly from Proctor to Duluth and 0.6 mi. northeasterly, St. Louis Co. Grand total $2,145,129. CD 7/21, under LB.

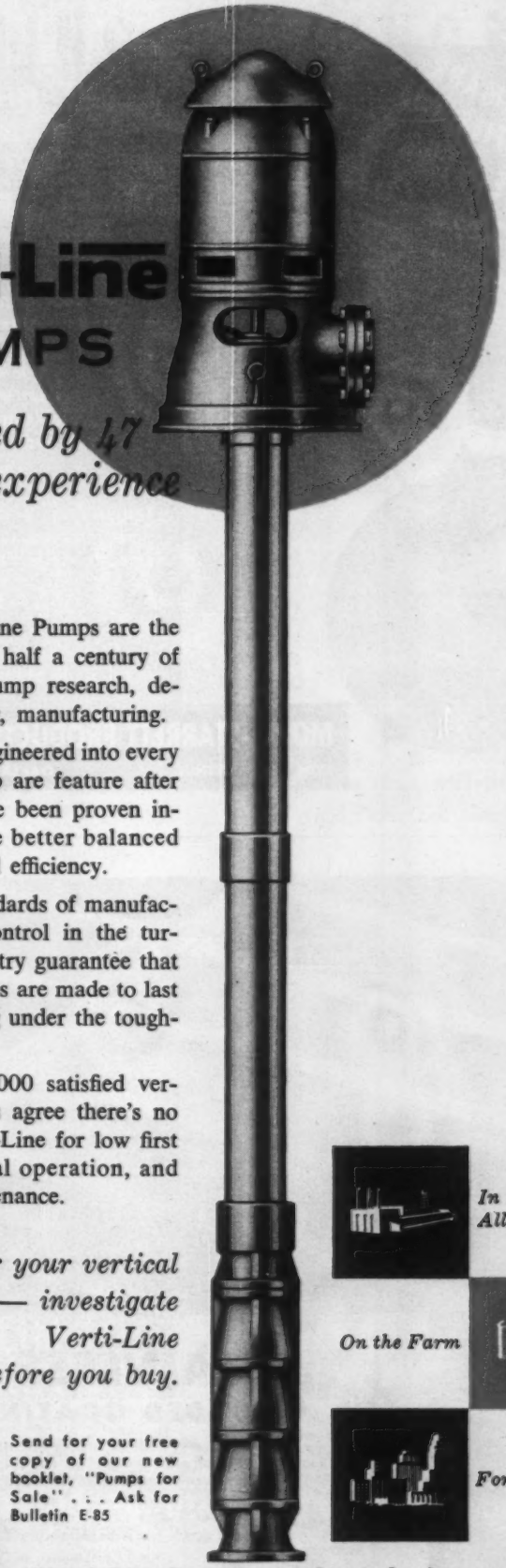
▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**Payne & Dolan, Inc., & Badger Materials, Inc.**, First National Bank Bldg., Chicago, Ill. LB $1,810,361. b. conc. 9.99 mi. Proj. 3-11-P (1), Butler Co.;

KTA—**T. F. Marbut**, Columbia Bldg., Emporia, Kan. LB $1,677,771. b. conc. 8.2 mi. Proj. 5-17-P (1), Chase and Lyon Counties;

KTA—**San Ore Constr. Co.**, McPherson, Kan. LB $1,812,486. b. conc. 9.1 mi. Proj. 5-18 and 19-P (1), Lyon Co.;

KTA—**Western Contg. Corp.**, 406 Benson Bldg., Sioux City, Iowa. LB $1,496,900. rein.-con. 7.33 mi. Proj. 7-29 and 29-P (1), Shawnee and Douglas Counties;



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KTA—**R. G. Aldridge Contr.**, 1610 Nebraska Ave., Kansas City, Kan. LB $1,187,004. grading, drainage 1.08 mi. Proj. 10-42-E (1), Wyandotte Co.;

KTA—**Amis Constr. Co.**, P. O. Box 1871, Oklahoma City, Okla. LB $979,606. b. conc. 4.89 mi. Proj. 3-10-P (1), Butler Co.; LB $896,846. b. conc. 4.45 mi. Proj. 3-9-P (1), Sedgwick and Butler Counties. Bids July 22. CD 7/15 and 7/8.

▲† **Shaw-Estes & Co.**, 1407 S. Akard St., Dallas, Tex., CA $1,988,178, jet engine test shop, ENG-34-66-55-86, OKLAHOMA CITY, OKLA. U. S. Eng., Box 61, Tulsa, Okla. CD 4/28, under LB.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Adams Brothers**, P. O. Box 310, Athens, Tex., LB $151,633, grading, structures, base, surf. 8.723 mi. Hy. FM 2088, Proj. S-387 (5) Wood Co.;

Tex.—**W. R. Boyd, Inc.**, P. O. Box 408, Center, Tex., LB, $136,211, grading, structures, base, surf. 8.381 mi. Hy. FM 947 and 2141, Proj. S-1152 (2), Shelby Co.;

Tex.—**T. M. Brown & Sons, Inc.**, P. O. Box 1919, Abilene, Tex., LB $107,745, grading, structures, base, surf. 5.951 mi. Hy. FM 1193, Proj. S-883 (2), Jones Co.;

Tex.—**R. C. Buckner**, P. O. Box 609, Jacksonville, Tex., LB, $306,237, flex. base and b. conc. 2.637 mi. U. S. 69 and 96, Proj. F-355 (7) and (8), Hardin Co.;

Tex.—**J. Carroll Weaver, Contr.**, P. O. Box 996, Sinton, Tex., LB $116,539, grading, base, surf. 11.673 mi. FY 631 and 136, Proj. S-1171 (2), San Patricio Co.;

Tex.—**Collins Constr. Co. of Texas**, P. O. Box 1192, Austin, Tex., LB $111,665, flex. base, b. conc. 0.929 mi. Hy. US 79, Proj. F-427 (5), Williamson Co.;

Tex.—**Constructors, Inc.**, P. O. Box 18013, Houston, Tex., LB $906,387, flex. base, H.N.S. R. R. overpass and T. & N.O. R.R. overpass 8.288 mi. Hy. ST 73, Proj. IN-1052 (26), Harris Co.;

Tex.—**Cooper & Woodruff**, 222 Mays Bldg., Amarillo, Tex., LB $75,137, grading, structures, base, surf. 5.885 mi. Hy. FM 677, Proj. S 1057 (3), Montague Co.;

Tex.—**Ivan Demet**, P. O. Box 1787, Amarillo, Tex., LB, $114,983, grading, structures, base, surf. 15.774 mi. Hy. FM 277 and 2124, Proj. S-466 (2), Hemphill Co.;

Tex.—**J. M. Dillinger, Inc.**, P. O. Box 4227, Corpus Christi, Tex., LB $737,167, flex. base, b. conc. 9.651 mi. Hy. SH 9, Proj. F-657 (12), Nueces Co.;

Tex.—**Gilvin-Terrell Inc.**, P. O. Box 2268, Amarillo, Tex., LB, $521,116, flex. base, b. conc. 17.423 mi. Hy. US 87, Proj. F 497 (7), Dallam Co.;

Tex.—**E. W. Hahle & Sons**, P. O. Drawer 650, Corsicana, Tex., LB, $79,886, addnl. base, crush. surf. tr. 9.093 mi. Hy. SH 34, Proj. C-173-2 & 3 and 17 & 5, Kaufman Co.;

Tex.—**Allen Keller Co.**, P. O. Box 319, Fredericksburg, Tex., LB, $238,034, grading, structures, base, surf. 11.642 mi. Hy. FM 1892, Proj. S-1943 (1), Kendall Co.;

Tex.—**Geo. Kris**, P. O. Box 5187, Austin, Tex., LB, $99,895, grading, structures, base, surf. Hy. FM 1495, 6.526 mi., Lampasas Co.;

Tex.—**C. H. Livingston**, P. O. Box 1012, La Porte, Tex., LB, $209,853, flex. base crushed surf. tr. FM 1764, 5.453 mi. Proj. S-1857 (2), Galveston Co.;

Tex.—**F. W. McKinney**, P. O. Box 190, Nacogdoches, Tex., LB, $225,959. flex. base, crush. surf. tr. 9.541 mi. Hy. SH 34, Proj. C-174-1 & 2-19 & 8, Fannin and Hunt Counties;

Tex.—**McMillin-Burkett Constr. Co.**, P. O. Box 1161, Texarkana, Tex., LB, $258,401, flex. base and b. conc. 1.375 mi. Hy. US 67, Proj. E 10-13 & 12-13 & 16, Bowie Co.;

Tex.—**Perry Constr. Co.**, 501 Insurance Bldg., San Antonio, Tex., LB, $84,555, grading, structures base, surf. 6.689 mi. Hy. FM 2239, Proj. S-1082 (1), Bastrop and Lee Counties;

Tex.—**South Tex. Constr. Co.**, P. O. Box 3536, Corpus Christi, Tex., LB $350,219, grading, structures, base, surf. 9.374 mi. Hy. FM 521, Proj. R 847-5-3, Matagorda Co.;

Tex.—**Henry Stafford**, P. O. Box 1047, Lubbock, Tex., LB, $242,527, flex. base, b. conc. 20.543 mi. Hy. SH 115, Proj. S-177 (3), Winkler and Ward Counties;

Tex.—**T. R. Vardeman & Son**, P. O. Box 485, Nacogdoches, Tex., LB, $245,788, flex. base and crushed surf. tr. 2.471 mi. Hy. SH 21, 2.471 mi. Proj. F-144 (3), Cherokee and Nacogdoches Counties. Bids July 19. CD 6/29 and 6/30.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Cooper & Woodruff**, 204 Mays Bldg., Amarillo, Tex., LB $438,698, grading, structures, base, surf. 11.785 mi. Hy. FM 369, Proj. S-797 (3) Wichita Co.; LB $453,552, flex. base, b. conc. 19.5 mi. Hy. US 70, Proj. F-529 (7) Motley and Cottle Counties;

Tex.—**Holland Page**, P. O. Box 1181, Austin, Tex., LB $372,382, flex. base and b. conc. 7.385 mi. Hy. US 87, Proj. F 842 (3), Bexar and Wilson Counties; LB $314,731, flex. base, 2 course surf. tr. 6.629 mi. Hy. US 87, Proj. F-46 (7), Gillespie Co.;

Tex.—**Collins Constr. Co. of Texas**, P. O. Box 1192, Austin, Tex., LB $585,069, wid'n, grading, structures, b. conc. 10.359 mi. Hy. US 90 and 183, Caldwell Co.;

Tex.—**Dodds & Wedegartner, Inc.**, San Benito, Tex., LB $818,616, flex. base and b. conc. 6.721 mi. Hy. US 83, Proj. F 93 (4) Cameron Co.;

Tex.—**C. H. Livingston**, P. O. Box 1012, La Porte, Tex., LB $130,844, grading, structures, base, surf. 5.396 mi. Hy. FM 517, Proj. R 978-2-4, Galveston Co.;

Tex.—**Perry Constr. Co.**, 501 Insurance Bldg., San Antonio, Tex., LB $152,687, grading, structures, base, surf. 5.053 mi. Hy. FM 1468-SH-35, Matagorda Co.;

Tex.—**Hugh McMillan**, P.O. Box 1227, El Paso, Tex., LB $244,204, grading, structures, base, surf. 23.73 mi. Hy. FM 1450, Proj. S-1580 (2), Reeves Co.;

Tex.—**T. R. Vardeman & Son,** P. O. Box 485, Nacogdoches, Tex. LB $91,018. grading, structures, base, surf. 7.095 mi. Hwy. FM 197, Proj. S-2055 (1), Rusk Co.;
Tex.—**Austin Constr. Co.,** P. O. Box 1590, Dallas, Tex., LB $95,498, grading, structures, base, surf. 4.708 mi. Hy. FM 2123, Proj. R 1606-2-1, Wise Co.;
Tex.—**Allen Killen Co.,** P. O. Box 393, Fredericksburg, Tex., LB $85,200. flex. base and 2 course surf. tr. 0.874 mi. Hy. US 281 Proj. F-723 (1), Burnet Co.;
Tex.—**J. M. Dillinger, Inc.,** P. O. Box 4227, Corpus Christi, Tex., LB $115,536, grading, flex. base shoulders shoulders seal 17.312 mi. Hy. SH 359, Proj. F-429 (20) San Patricio and Bee Counties;
Tex.—**Angelo Constr. Co.,** P. O. Box 1957, San Angelo, Tex., LB $175,918, wid'n., b. conc. resurf. 5.611 mi. Hy. US 84, Proj. C-162-1-26 & 27, McLennan Co.;
Tex.—**H. V. Caver, Inc.,** Atlanta, Tex., LB $114,937 grading, lengthening structures, flex. base, 1 course surf. tr. 4.981 mi. Hy. SH 43, Proj. C 207-4-13, Panola Co.;
Tex.—**D. H. Buchanan Constr. Co.,** 1318 N 5 St., Temple, Tex., LB $87,659. grading, structures, flex. base, 2 course surf. tr. 1.344 mi. Hy. SH 29, Proj. C-337-1 & 2, 8 & 5, Williamson Co.;
Tex.—**Gilvin-Terrill, Inc.,** P. O. Box 2268, Amarillo, Tex., LB $1,254,408, grading, structures, flex. base b. conc. and T. & P. R. R. overpass 15.718 mi. Hy. US 80 Proj. IN 235 (26), Howard Co. Bids July 20. CD 6/29 and 6/30.

▲ **Colorado Interstate Gas Co.,** Colorado Springs Bank Bldg., Colorado Springs, Colo., Owner Builds, $8,000,000. natural gas pipe line from Rock Springs, Wyo. to Denver, Colo., COLORADO and WYOMING. CD 4/7.

BUILDINGS—LB & CA

Martin K. Eby Constr. Co., 610 N. Main St., Wichita, Kan. CA $952,180. general contract ANIMAL INDUSTRIES BLDG., Kansas State College, MANHATTAN, KAN. State Dpt. Admin., State House, Topeka, Kan. (Correction—status). CD 7/20, under LB.

▲ **E. G. Farrell,** P.O. Box 137, Odessa, Tex., CA, $1,169,231, Ector Junior-Senior High SCHOOL, ODESSA, TEX. Ector County School Dist., Odessa, Tex. Bids July 12, awarded July 19. CD 7/20, under LB.

▲ **Stearns-Roger Mfg. Co.,** 660 Bannock St., Denver, Colo. CA $1,000,000. REFINERY expansion, BILLINGS, MONT. Continental Oil Co., Ponca City, Okla.

▲ **Hom-Art Homes & Country Squire Homes,** c/o A. L. Johnson, Railway Exchange Bldg., Denver, Colo., CA $20,000,000. 1,000-HOME DEVELOPMENT, near Centennial Turf Club, ENGLEWOOD, COLO. Valley Development Co., c/o A. L. Johnson, Railway Exchange Bldg., Denver, Colo.

▲ **Jefferson County School Dist. No. R-1,** 1380 Yarrow, Lakewood, rejected bids July 8, 1 and 2 story, brick, steel HIGH SCHOOL, 34th St. and Ford Ave., GOLDEN, COLO. LB $1,067,700. CD 6/8/54.

▲ **C. H. Leavell & Co.,** Box 1451, El Paso, Tex., LB, $1,962,028. Radiochemistry LABORATORY, Inv. 291-55-8, LOS ALAMOS, N. M. Atomic Energy Comn., Los Alamos, N. M. Bids July 19. CD 6/2.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 17, 24 California
STREETS AND ROADS
August 10, 11, 17, 18, 24 California

HEAVY CONSTRUCTION—LB & CA

▲ CALIFORNIA—State Div. Hys., Sacramento,
Calif.—**Arthur B. Siri, Inc.,** 1357 Cleveland Ave., Santa Rosa, Calif., LB, $76,350. (4 bidders) seal coat 69 mi. hy. at various locations, Lake, Mendonino, Humboldt and Trinity Counties;
Calif.—**Baun Constr. Co.,** 3229 W. Dudley Ave., Fresno, Calif., LB, $83,563, (6 bidders) surf. 1.9 mi. and grading FAS County Rte. 1169, Butte Co.;
Calif.—**Granite Constr. Co.,** P.O. Box 900, Watsonville, Calif., LB, $962,632, (11 bidders) grading, surf. 1.6 mi. Sign Route 17, 3 rein.-con. bridges and 1 pedestrian overcrossing, Santa Cruz, Santa Cruz Co.;
Calif.—**Frederickson Bros.,** 1259 Sixty Fifth St., Emeryville, Calif., LB, $91,757, (6 bidders), grading, surf. 1.9 mi. FAS County Rte. 1108, wid'n. bridge, Solano Co. Bids July 20. CD 6/27.

Baker-Anderson Co., 12420 S. Bloomfield Ave., Norwalk, Calif., CA $868,759. 85,000 ft. 6- to 28-in. water supply system, HUNTINGTON BEACH, CALIFORNIA. West Orange County Water Bd., City Hall, Huntington Beach, Calif. Harrison & Wooley, 308 W. 5 St., Santa Ana, Calif., engrs. Bids July 13. CD 7/20.

▲ **Johnson-Western Constructors & E. A. Irish,** Box 6, San Pedro, Calif., LB $1,119,662 Proj. 10, Normandie Ave. storm drain, Gardena, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids July 22. CD 6/30, under Calif., Gardena.

▲ **Robert E. McKee,** 4700 San Fernando Rd., Los Angeles, Calif., CA, $2,711,000. airline maintenance hangars and service bldg., Los Angeles International Airport, LOS ANGELES, CALIF. American Air Lines, 80 E. 42 St., New York, N. Y. Bids June 15. CD 6/7.

BUILDINGS—LB & CA

Bell & Valdez Development Co., 1044 116 Ave. N.E., Bellevue, Wash., Day Labor, $736,000. 58 HOUSES, on S.E. 45 St. and 150 Ave. S.E., BELLEVUE, WASH. CD 12/15.

▲ **H. Valle, Inc.,** 407 3 Ave. W., Seattle, Wash., CA $818,200. general contract 6 story, 111x130 ft., steel frame, TELEPHONE EQUIPMENT BLDG., SEAT-

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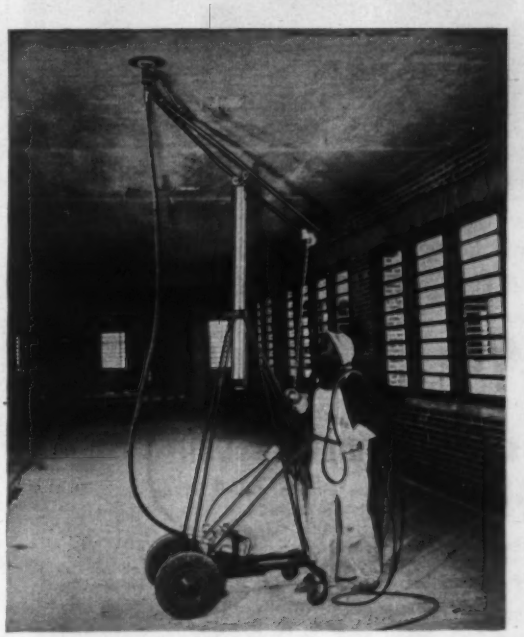

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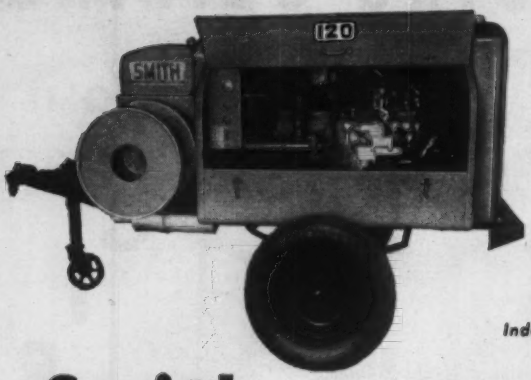

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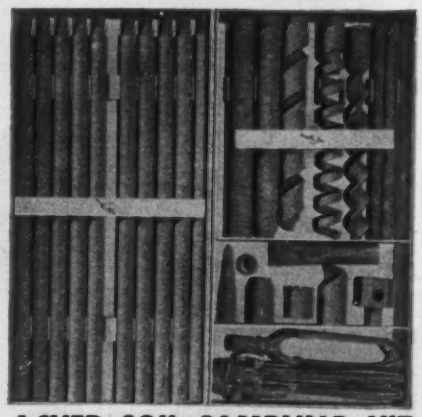

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TLE, WASH. Pacific Telephone & Telegraph Co., Exchange Bldg., Seattle 4, Wash. Bids July 14. CD 6/30, under Commercial Buildings.

Bethlehem Pacific Coast Steel Co., 3631 E. Marginal Way., Seattle, Wash., CA $230,000. structural steel (Seattle, Wash.).;

Otis Elevator Co., 2200 4 Ave., Seattle, Wash., CA $120,000. elevator work (Seattle, Wash.)

Lewis Constr. Co., 1711 Jackson St., Seattle, Wash., CA $821,000. McLoughlin Junior High SCHOOL, VANCOUVER, WASH. Vancouver School Dist., Vancouver, Wash. Bids June 26, awarded June 28. CD 7/7, under LB.

▲ **Diversified Builders, Inc.**, 1616 S. Greenwood St., Montebello, Calif., CA, $1,353,500, AIRCRAFT FACTORY BLDGS. and existing bldg. extens., TORRANCE, CALIF. Douglas Aircraft Co., Inc., 827 Lapham St., El Segundo, Calif. Bids July 7, awarded July 20. CD 7/12, under LB.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
August 10 Ontario

▲ Ont., Toronto—BA 8/15—Municipality of Metropolitan Toronto, 67 Adelaide St. E., filtration plant exten., doubling capacity of 1,000 gal. per day with addnl. filters, settling tanks, mixing tanks, water intake, high-lift and low-lift pumping equip., new superstructure, $7,300,000. Plans deposit $25. Gore & Storrie, 1130 Bay St., engrs. CD 9/3.

BUILDINGS—BA

▲ Ont., London—SCHOOL—BA 8/23—Riddle, Connor & Assocs., archts, Wright Bldg., 2 story H-shaped, 200x300 ft. brick, steel, concrete HIGH SCHOOL for East Middlesex High School Bd., R.R.1, Ilderton, Ont., $1,000,000. CD 2/21.

BUILDINGS—SLC

▲ Que., Montreal—OFFICE—Fremont Investments Ltd., c/o Greenspoon, Freelander & Dunne, archts., 4151 Sherbrooke St. W., soon lets contract substructure only for 12 story, 110x100 ft. office bldg., Peel St. Total Est. $1,250,000. Pierre D'Allemagne, 5950 Cote des Neiges Fd., engr. CD 5/6.

HEAVY CONSTRUCTION—LB & CA

▲ **Foundation Maritime Ltd.**, 135 Lower Water St., Halifax, N. S., LB, $1,557,778 (5 bidders) Pier A-1, Halifax Harbor, HALIFAX, N. S. National Harbor Bd., West Block, Parliament Bldgs., Ottawa, Ont.

▲ **C. A. Pitts General Contractor Ltd.**, 30 Commercial Road, Toronto, Ont., CA, $11,700,420 (4 bidders) power channel imprvs., excav., etc., St. Lawrence River at end near Galop Island, part of St. Lawrence Seaway and Power Proj., Cornwall, ONTARIO. Ontario Hydro-Electric Power Comn., 620 University Ave., Toronto, Ont. Bids July 12, awarded July 22. CD 6/27.

BUILDINGS—LB & CA

Foundation Maritime Ltd., 135 Lower Water St., Halifax, N. S., CA, $916,718 (11 bidders) PHYSICAL and RECREATIONAL TRAINING BLDGS., Royal Canadian Navy Base, DARTMOUTH, N. S. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Pierre d'Allemagne, 3180 Van Horne Ave., Montreal, Que., engr. Grattan D. Thompson, 1241 Guy St., Montreal, Que., archt. Awarded July 20.

▲ **Geo. Hardy Ltd.**, 163 Wicksteed Ave., Toronto, Ont., CA, $1,545,619; (8 bidders) 30 type "B" APARTMENTS, BARRIEFIELD, ONT. Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont. Bids June 21, awarded July 22. CD 6/7.

▲ **Fassel Constr. Co.**, 2201 Kingston Rd., Toronto, Ont., CA $1,000,000. 7 story, bsmnt., structural steel f., brick, St. Joseph's HOSPITAL addn., NORTH BAY, ONT. Sisters of St Joseph, 720 McLaren St., North Bay, Ont. Louis N. Fabbro, 251 Lornes St. S., Sudbury, Ont., archt. Awarded July 14. CD 7/12/46.

▲ **E. Rule Ltd.**, 451 Victoria Park Ave., Toronto, Ont., CA, $700,000. 1 story, 102x215 ft., structural steel brick vaccine LABORATORY, TORONTO, ONT. University of Toronto, Toronto, Ont. Marani & Morris, 1250 Bay St., Toronto, Ont., archts. Awarded July 15.

▲ **Gibraltar Constr. Co.**, 4120 City Hall Ave., Montreal, Que., CA, $1,000,000. 12 APARTMENTS, Lemoine St. in Longueuil, MONTREAL, QUE. Longueuil Development Corp., 4120 City Hall Ave., Montreal, Que. Reuben Fisher, 3177 St. Sulpice Rd., Montreal, Que., archt. Awarded July 14.

▲ **J. L. Guay & Brother Ltd.**, 6900 Cote des Neiges Rd., Montreal, Que., CA, $2,200,000 (7 bidders) 4 story E-shaped 206x225 ft., rein.-con., brick, religious order's old people's HOME, MONTREAL, QUE. Little Sisters of the Poor, 1035 Des Seigneurs St., Montreal, Que. Bids July 15, awarded July 21. CD 7/1.

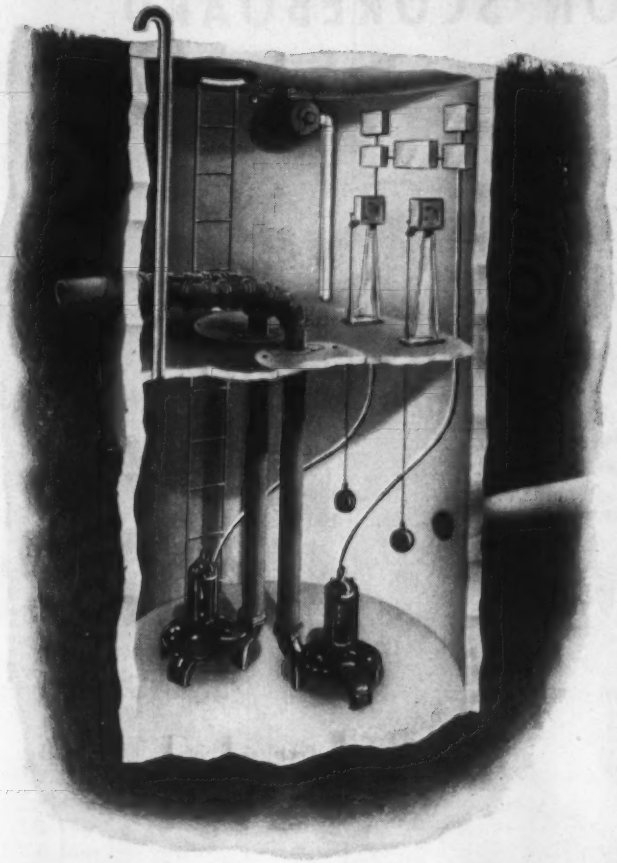
U. S. POSSESSIONS

BUILDINGS—LB & CA

▲ **Govt. Virgin Island, P. Wks. Comn.**, Charlotte Amalie, St. Thomas, Virgin Islands, rejected bids May 18, Proj. No. 21, ELEMENTARY and JUNIOR HIGH SCHOOL and ELEMENTARY SCHOOL, ST. CROIX, VIRGIN ISLANDS, LB $1,156,752. CD 6/8, under LB.

(Proposed Advertisements see pp. 89 to 92)

The SUBMERSIBLE SEWAGE EJECTOR



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HIGHWAY UNDERPASS DRAINAGE

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Capacities 35 to 2000 GPM with heads to 70 feet.
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Illustration shows economical installation which DOES NOT REQUIRE A PUMP HOUSE to mar the landscape. This reduces the overall cost of the Lift Station or Underpass Pumping Station.

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New Bulletin **SE 860 C** with plans and specifications for lift stations, highway underpass pumping installations and many other applications will be sent upon request.

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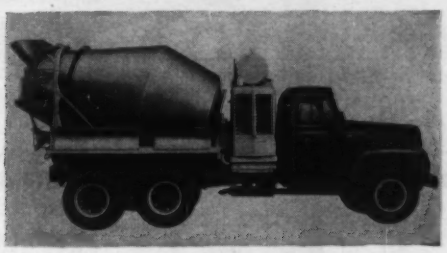

3½ to 6 Yard Capacities

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TM 1055

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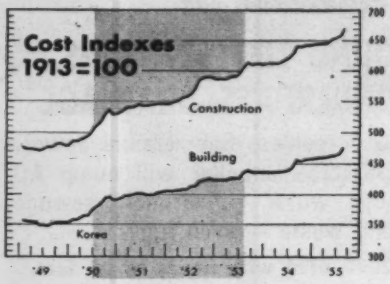
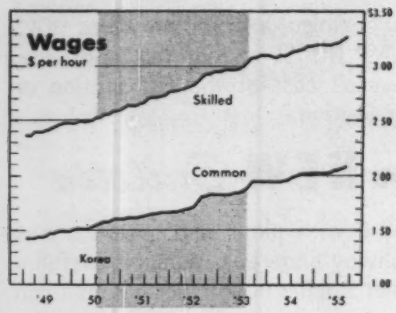
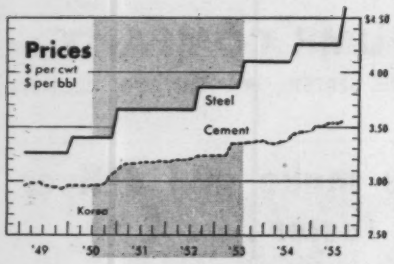
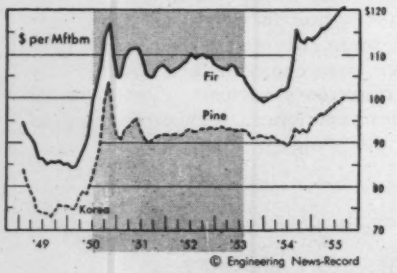
AUGUST CONSTRUCTION SCOREBOARD









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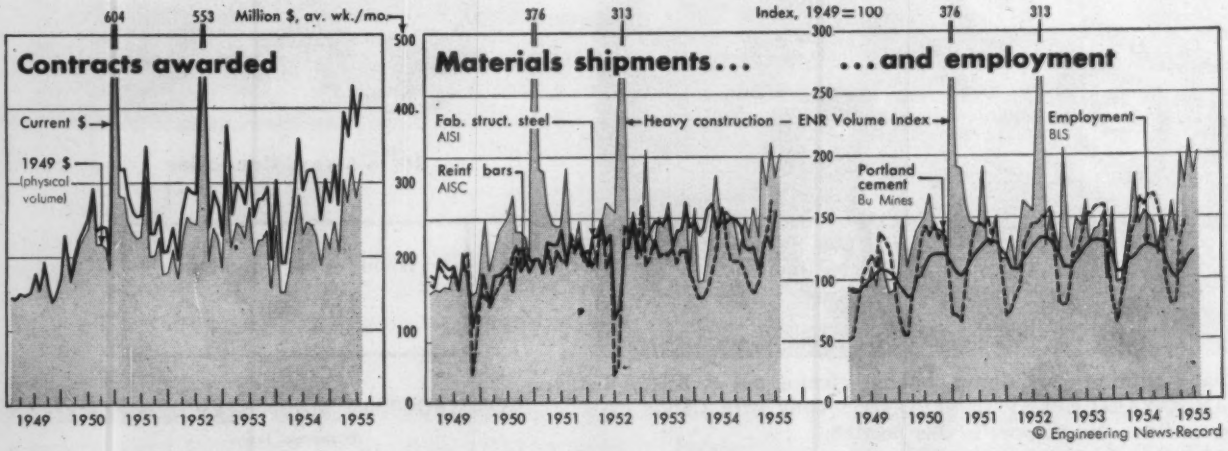
ENR INDEXES (1913 = 100), 20-cities' average	1955 Aug.	% Change from last Month	% Change from last Year
Construction Cost	672.24	+1.8	+4.8
Building Cost	478.03	+2.2	+4.9
WAGE RATES, 20-cities' average			
Common	$2.087	+0.6	+4.0
Skilled (aver. 3 trades)	3.264	+0.5	+3.7
Bricklayers	3.522	+0.5	+2.5
Structural Ironworkers	3.247	+0.6	+4.7
Carpenters	3.022	+0 4	+3.9
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	3.557	+0.2	+3.2
Structural Steel, (3-mill aver.), per cwt	4.600	+8.2	+8.2
Sand, per ton	2.362	+0.2	+5.4
Lumber, 2x4 Fir, per M. ft. bm	120.805	+0.4	+4.6
Lumber, 2x4 Pine, per M. ft. bm	100.066	+0.7	+7.3
Common brick, per M	34.530	+0.4	+3.9
Ready-mixed concrete, per c. y.	12.538	0.0	+3.4
Structural Clay Tile, 3x12x12 per M	162.453	+0.9	+0.2

CONTRACTS AWARDED (Millions)	1955 July (4 Wks)*	1955 7-Months	% Change from '54 July (5-Wks)*	% Change from '54 7-Months
Total U. S. (ENR reported)	$1684.2	$11,108.3	+33.7	+37.5
Private	1026.5	6932.0	+53.8	+51.8
Public	657.7	4176.3	+10.9	+18.9
Federal	212.0	1105.4	+38.4	+49.2
ENR Volume Index, '13 = 100	699	626	+27.8	+31.5
NEW CAPITAL (Millions)				
Total	1692.3	6046.7	−12.1	−15.7
State & Municipal Bond Sales	290.4	2587.8	+2.8	−24.2
Corporate Security Sales	299.7	2073.6	+ 0.1	+ 9.3
Federal (non-federal work)	671.4	822.3	+42.9	+16.5
Federal (federal work)	430.8	563.0	−50 8	−51.2

* Cumputed on weekly average

MATERIAL SHIPMENTS & LABOR SUPPLIES (millions)	1955 Apr. (A) May (M) June (J)	4-Mos. 5-Mos. 6-Mos.	% Change from '54 Mo.	% Change from '54 Yr.-Cum.
Cement, bbls. Bu. of Mines	24.993(A)	74.717(4)	+5.9	+ 8.8
Fabr. Struc. Steel, tons AISC	.282(J)	1.415(6)	−2.7	−12.8
Lumber, mil. ft. bm., NLMA	3.505(M)	16.198(5)	+9.3	+ 6.1
Lumber Prod., mil. ft. bm., NLMA	3.424(M)	15.739(5)	+3.0	+ 0.6
Contract Const. Employ., BLS	2.610(J)†	2.386(6)	−4.4	− 4.7

†Average



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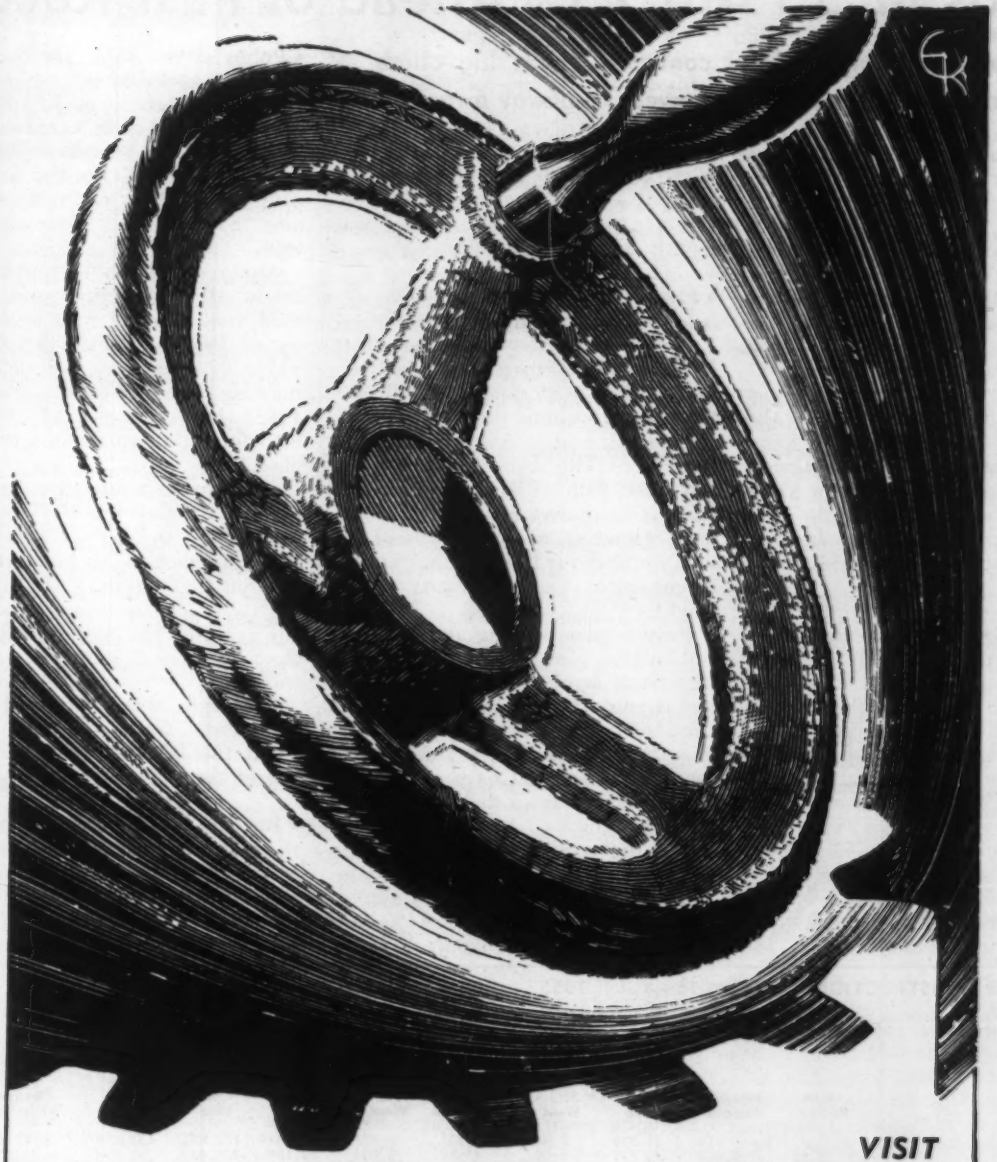

VISIT

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New machines and products of the Export Engineering Works:

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Awards in '55 Are 25% Ahead of Past Record

Private awards and federal contracts cause big climb in July weekly average over June level. Highway awards drop

Like Ol' Man River the construction boom just keeps rolling along. When one category slacks off a little, other sectors pick up speed. Contract awards reported to ENR in July averaged $421 million per week, well above the $376-million average for June which set a record for that month. However, the July weekly average fell short of the tremendous July in 1952 when atomic energy contracts accounted for more than 40% of the total.

Total heavy construction contracts so far this year total more than $11.1 billion. They have boomed 38% above a year ago—and 25% ahead of the previous record set in 1953.

• **Leaders**—Private awards and federal contracts provided the increase in July. Private work reached a July record of $257 million per week. Though this was somewhat below the boom level of March and May, it was 54% ahead of July 1954. For the first seven months, private awards total $6.9 billion. That is 36% more than the previous record, reached in 1953.

Federal work averaged $53 million, the highest since September 1953. The seven-month total is $1.1 billion, up 49% over 1954 and the highest since the record volume in 1952.

However, state and municipal contracts slacked off in July, largely because of a decline in highway awards. The $111-million weekly average was slightly higher than in July last year.

• **Private awards**—Here's a more detailed look at private contracts:

Industrial building pulled out of its June decline and roared up to an average of $86.6 million per week. That's the biggest volume in this category since 1953, and is nearly double the June rate. The seven-month total is just over $1.6 billion, a sensational 52% increase over last year's low volume. However, it is 38% behind the same period in 1951, when Korean defense-plant expansion was at its height.

Private mass housing and commercial building slacked off a bit from the high June level, but volume continued strong. Housing contracts topped the $100-million per week mark. Commercial awards had their third largest month this year. Compared to last year, housing was up slightly and commercial up 60%.

For the year so far, mass housing contracts total close to $2.6 billion, 49% above 1954 and a new record. Commercial awards are up 44% to a new record of $721 million.

• **Public works**—Here are the details on public awards:

Highway awards in July were off from June's all-time record—a weekly average of $46.8 million compared with $54 million. For the first seven months, highway contracts total almost $1.3 billion, 21% above last year.

Another highlight of public works last month was the sharp rise in nonresidential building to a weekly average of $45.7 million, compared with $35 million per week in June. This is the biggest June-to-July rise since 1952. However, the $1,038-million total for the seven months is 2% behind 1954.

Waterworks contractors had a big month, bringing the 1955 total to a record $154 million, 21% more than 1954 and about 12% higher than the previous high in 1953. Earthwork & waterways contracts are 93% above last year for the first seven months, close to previous high levels in 1951 and 1952.

Sewerage awards were off sharply last month. So far this year, they are about the same as 1954 and within 5% of the 1953 high.

• **Regions**—For the first seven months, all regions are ahead of last year. The Middle Atlantic continues to have the biggest percentage gain—55%. In the rear is the South, whose percentage gain is 8%.

ENGINEERING CONSTRUCTION CONTRACTS—JULY 1955

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $44,000; *other public works,* $73,000; *industrial buildings,* $93,000; *other buildings,* $344,000.

Four Weeks—Thousands of Dollars (000 Omitted)

	July, 1955							U. S. Cumulative Seven Months		% Change	Canada July
	New England	Middle Atlantic	South	Mid West	West of Mississippi	Far West	Total U. S.	1955	1954	'54 to '55	1955
Public Works											
Waterworks	4,321	878	1,222	2,808	12,231	3,531	**24,991**	**153,835**	127,153	+21	1,335
Sewerage	2,225	3,612	3,377	4,991	4,849	3,054	**22,108**	**223,022**	223,294	− 0.2	1,429
Bridges	890	13,202	3,719	8,395	17,191	2,061	**45,458**	**275,282**	261,567	+ 5	4,310
Earthwork and drainage	99	4,660	7,849	311	6,145	23,612	**42,676**	**318,785**	164,981	+93	10,040
Streets and roads	18,089	21,582	20,852	41,850	55,167	29,521	**187,061**	**1,250,558**	1,035,434	+21	16,984
Public buildings, residential	1,451	4,666	9,071	3,292	4,204	3,247	**25,931**	**164,725**	140,921	+17	5,228
Other public buildings	9,354	44,180	32,729	31,823	41,841	22,817	**182,744**	**1,022,327**	1,037,776	− 2	10,071
Unclassified	15,921	17,437	28,799	8,381	35,609	20,570	**126,717**	**767,727**	522,590	+47	8,122
Total public	**52,350**	**110,217**	**107,618**	**101,851**	**177,237**	**108,413**	**657,686**	**4,176,261**	3,513,716	+19	**57,519**
Federal government (included in above classifications)	16,062	33,457	63,091	12,487	50,215	36,707	**212,019**	**1,105,431**	740,631	+49	11,780
Private											
Bridges	.....	.....	.....	.....	.....	.....	.....	**1,625**	6,650	−76	.....
Industrial buildings	1,605	159,979	10,978	107,376	25,301	41,213	**346,452**	**1,600,898**	1,051,791	+52	27,491
Mass housing	19,051	110,350	7,697	129,686	111,919	35,371	**414,074**	**3,819,659**	2,558,860	+49	40,509
Commercial buildings	7,694	29,700	12,179	37,183	43,133	11,550	**141,439**	**1,035,731**	720,850	+44	10,452
Unclassified	485	9,361	55,780	9,261	42,876	6,749	**124,512**	**474,130**	226,813	+109	.....
Total private	28,835	309,390	86,634	283,506	223,229	94,883	**1,026,477**	**6,932,043**	4,564,964	+52	78,452
Total Engineering Construction:											
July, 1955—4 weeks	**81,185**	**419,607**	**194,252**	**385,357**	**400,466**	**203,296**	**1,684,163**	.....	.....	.....	**135,971**
June, 1955—5 weeks	95,019	544,395	168,568	358,096	482,599	232,867	**1,881,544**	.....	.....	.....	209,557
July, 1954—5 weeks	70,931	385,673	237,958	268,513	408,573	203,338	**1,574,986**	.....	.....	.....	176,062
Seven Months—1955	**551,049**	**3,211,825**	**1,176,973**	**2,374,519**	**2,535,431**	**1,258,507**	.....	**11,108,304**	.....	**+38**	**987,386**
Seven Months—1954	444,076	2,067,732	1,088,994	1,732,627	1,814,980	930,271	.....	.....	8,078,680	.....	788,263
% Change '54 to '55	+24	+55	+8	+37	+40	+35	.....	.....	.....	.....	+25

Centrifugal Pipe Gets a Price Index

The pit-cast vs. spun-cast price trend problem on cast iron pipe has been resolved by a new price index computed by U.S. Pipe & Foundry, and published now by ENR for the first time.

The new price index is for centrifugal-cast pipe. But at the same time, the index numbers may be read as the dollar price per net ton of Class B bell-and-spigot pit-cast iron pipe.

The new indexes are available for each of ENR's 20 U.S. cities. They measure the trend of prices F.O.B. each city, including freight costs from the foundry. A similar index is also available for U.S. P.&F's Burlington, (N.J.) foundry.

The table below shows the current indexes in each city for July, and for the same months in 1954 and 1953. Current and future indexes for the 20 cities and the Burlington foundry will appear in ENR's monthly Materials Price Report, starting with this issue (page 56).

A complete historical record of the index from January 1950 to date will be included in ENR's next Cost Issue, on Sept. 29. Prices of pit-cast pipe before 1950 have been published regularly in ENR's monthly Materials Prices Report.

Cast Iron Pipe Price Indexes—20 Cities

U.S. Pipe and Foundry Co.

City	Index July 1953	Index July 1954	Index July 1955	% change '53-'54	% change '54-'55
Atlanta	111.0	109.6	109.6	−1.3	0
Baltimore	120.9	120.9	117.9	0	−2.5
Birmingham	104.3	104.3	104.3	0	0
Boston	125.1	125.1	120.5	0	−3.7
Chicago	121.0	121.0	121.0	0	0
Cincinnati	116.1	114.5	114.5	−1.4	0
Cleveland	121.8	121.8	121.8	0	0
Dallas	120.7	120.7	120.7	0	0
Denver	126.4	126.4	126.4	0	0
Detroit	121.8	121.8	121.8	0	0
Kansas City	119.7	119.7	119.7	0	0
Los Angeles	125.4	125.4	126.1	0	+0.6
Minneapolis	126.0	126.0	126.0	0	0
New Orleans	114.0	112.5	112.5	−1.3	0
New York	118.9	118.9	116.5	0	−2.0
Philadelphia	115.9	115.9	115.9	0	0
Pittsburgh	122.5	122.5	122.5	0	0
St. Louis	115.5	114.1	115.5	−1.2	+1.2
San Francisco	125.4	125.4	126.1	0	+0.6
Seattle	125.4	125.4	126.1	0	+0.6

Figures in table are Price Indexes for Centrifugal Cast Iron Pipe, with carload freight allowed to city, which also serve as the historical record of the $ Per Net Ton Price of Class B Pit Cast Pipe.

Price Boost on Cast Iron Pipe

For the first time in two years, prices of centrifugal cast-iron pipe have been raised at foundry level. The increase is almost 5%. The July indexes in the table (above) do not reflect this price rise. However, it will be included in the August index.

• **How?**—Now, how can an index of the price of centrifugal-cast pipe be at the same time a dollar price per ton for pit-cast pipe? The answer is that the relationship between the two prices is extremely stable. Here's how the new index is put together: It's the average price per foot of the different sizes of standard centrifugal-cast pipe, adjusted by a fixed multiplier to make a price index. From February 1950 through December 1954, the multiplier was 2.27. Due to a change in specifications on centrifugal pipe, the multiplier this year has been 2.44.

• **Specifications**—The centrifugal-cast sizes used are 6 in., 8 in., 10 in., 12 in., 14 in., 16 in., 18 in., 20 in., and 24 in. on the basis of average price per foot when cut in 18-foot lengths.

Consider "Reversible Lane" For Garden State Parkway

Because there's so much beach traffic between Woodbridge and Asbury Park on the Garden State Parkway, the New Jersey Highway Authority is thinking about a $20-million addition.

The addition would be a "reversible roadway"—a strip between the present north-bound and south-bound lanes that could be reversed with the flow of traffic. On Fridays and Saturdays, the new lane would be south-bound. On Sundays, as vacationists return from the shore, it would be north-bound.

According to Orrie de Noyer, chairman of the authority, top officials will make a decision after a study of this summer's traffic pattern. The job would mean that the Raritan River bridge would have to be widened.

Steel Price Boost Pushes Construction Costs Way Up

ENR's cost indexes move up about 2% this month as the result of an 8.2% boost in the mill price of structural steel which took effect July 6 (ENR July 14, p. 99), plus advances in lumber prices and wage rates.

The Construction Cost Index rises 12 points to a new record of 672.24 for August, based on 1913 = 100. This is 1.8 % above July and 4.8% higher than a year ago.

The Building Cost Index for August adds 10 points, reaching an all-time high of 478.03. That's a 2.2% climb, and 4.9% higher than a year ago.

• **Other factors**—The steel increase accounted for nearly nine full points of the rise in each index. The boost was more than double a year ago. However, only four cities reported higher prices for lumber. Cement prices were stable in all cities except Detroit, where there was a rise of 10 cents per bbl.

On the labor front, common-labor unions in three cities got wage hikes ranging from 5 cents per hour to nearly 18 cents in New York. The three key skilled trades signed up in six cities for raises running from 7.5 cents in Dallas to 16 cents for New York carpenters.

Health Service Reports on Sewerage Projects in U. S.

During the first quarter of this year, U. S. cities awarded 169 contracts for projects to control stream pollution and to provide sewage treatment. That's the word from the Public Health Service.

The contracts totaled $59 million, and covered 72 new plants and 97 additions, enlargments, and improvements to existing plants. Of the 72 new plants, costing $24.3 million, only four were for places of over 25,000 population. The four: San Jose, Calif.; Cumberland, Md.; Cincinnati; and Petersburg, Va. More than half the new plants will serve communities of fewer than 5,000.

Both the number and dollar value of contracts for the first quarter of 1955 are substantially the same as for the last quarter of 1954. But they are about 25% higher than for the same period last year.

Structural Shipments Are Still Far Behind New Orders

Shipments of fabricated structural steel finally turned upward in June. According to the American Institute of Steel Construction shipments were 282,325 tons, almost 27% above May. This is a surge that is long overdue, considering the rise in fabricated steel bookings this year.

Even with June's sharp climb, shipments for the first half are off 13% from 1954 to a little over 1.4 million tons. By contrast, bookings are 33% ahead of last year and now total almost 1.7 million tons. It would take a full month of shipments—with no new orders—to catch up with this backlog. Meanwhile, contractors are faced with continued slow deliveries on fabricated structurals.

Bookings show no signs of letting up. New orders in June rose to 318,159 tons, the highest for any month since April 1951. June was the fourth consecutive month in which bookings topped the same month of the previous year by about 50%.

You can get the steel* you need from Levinson's large stocks

. . . when you need it!

Right now Levinson has under cover in stock the largest and most complete selection of the various sizes of steel beams, channels, angles, plates, sheets, and bars in its 52-year history.

If you need any of the above items, pick up your phone and call Pittsburgh, Pennsylvania, Hubbard 1-3200 and tell us what you want and ask for a quotation. You'll find Levinson, as it has in the past, never takes advantage of steel shortages to hike prices. Try Levinson and see—and if you need your steel fabricated, Levinson can do that too. Send your specifications.

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Imported Cement

Rail shipments to inland points run up the price

Midwestern contractors, harassed by local shortages, were dumping cement this week into their mixers that had come all the way from West Germany. Like other imported cement that goes by rail to inland buyers, this cement was expensive—perhaps $1.50 per bag, compared with about 89¢ for local cement.

It isn't so much the long sea voyage that costs. Bagged foreign cement delivered on a New York pier sells for about $1.12 per bag, compared to a domestic New York price of $1.01½. The import duty is relatively small—2½¢ per 100 lb. It is the rail trip that costs money. For railroads charge cement a class rate, as they do merchandise and other relatively valuable items, instead of the bulk rate charged ore, coal, sand, and other such items.

• **Signal flag**—That's one reason why, when U. S. cement users buy foreign cement, you can be sure there's a shortage. These shortages are apt to shift about the U. S., depending on where the big jobs are and on what stage they are in. Right now, cement brokers say, they are importing cement for the New England area, the Great Lakes region (including Indiana, Illinois, Michigan, Wisconsin, and Ohio), Oklahoma and Texas, and in the Far West. Southern Florida is always a market for imported cement.

• **Rail vs. lake carrier**—Some of the cement destined for the Great Lakes region is moving by lake carrier, though scarcity of shipping has kited shipping rates up 40% since the season started this spring. Right now a typical mill quote for domestic cement in this area might be 89¢ a bag, compared to $1.25 or more for cement brought in through the Lakes and laid on the dock.

In any event, foreign cement won't go very far to meet spot shortages. The German cement now in the Midwest was the first installment of a 150,000-ton shipment that will reach the U. S. over coming weeks. And that may be the biggest single import deal this year.

• **Drop in the bucket**—Latest available government figures show that imports totaled only about 370,000 tons during the first five months of this year. Though nearly half of this came in May, imported cement will be only a

drop in the bucket even if it keeps climbing through November, as importers expect. For U.S. construction men will use somewhere around 55 million tons this year. Imports run about 1% to 2% of the total.

Another reason why foreign cement won't do much for U.S. shortages: Most cement brokers agree that the shortage of cement is world-wide. Construction is picking up in the West European countries that have provided most export cement. Biggest exporter to the U.S. is Belgium, where a substantial part of production usually goes for export, though it goes mostly to Belgium's neighbors. Other exporters to the U.S. are: West Germany, Denmark, Sweden, and even a trickle from Yugoslavia. (East Germany is reportedly smuggling some cement through the Iron Curtain for sale at low prices.) In this hemisphere, Mexico, the Dominican Republic, and Canada are U.S. suppliers.

Business Briefs . . .

• **M C & S rides again**—Merritt-Chapman & Scott Corp. has just acquired Savin Construction Co., of Hartford, Conn.—a roadbuilder with whom it has been associated on joint ventures. —for about $6.8 million worth of stock. Savin also specializes in deep water and heavy foundation work.

• **Penn Turnpike extension**—Pennsylvania Turnpike Commission expects to sell about $62 million in bonds this year to build a 46-mi connection between the New York Thruway and the Ohio Turnpike.

• **Cement expansions**—Giant Portland Cement Co. plans to add another 1,200,000 bbl to annual capacity at its Harleyville (S.C.) plant. Medusa Portland Cement Co., of Cleveland, will add another 750,000-bbl kiln at its York, Pa., plant in addition to a similar kiln now under construction.

• **Tacoma** will go ahead for the time being with its $146-million Cowlitz River hydro project, though sale of a recent $15-million revenue bond issue has been canceled because of litigation. The city has enough funds for the moment to carry on construction of Mayfield Dam, first part of the project. The State Fish and Game Departments and a local Indian tribe have filed last-minute suits that may not be settled for months.

• **Gypsum wallboard plant** costing about $2.5 million is being started by Pabco Products, Inc., near Florence, Colo. It should be in production by April 1956.

(*B&F continued on page 86*)

Announcing the new

Printmaster 810

The Printmaster is the cumulative result of twenty years of research, engineering, and user experience. It offers big production, superlative performance, wide versatility, easy and economical operation—all for the first time combined in a medium price machine.

For any company which requires volume prints of varied types and sizes, the Printmaster 810 can show marked savings in printing time and print costs.

The 810 prints and develops in one continuous operation, at speeds up to 40 feet a minute, on roll or cut stock as wide as 42 inches. It's literally packed with new features.

Jet nozzle feed, a new evaporation principle; steady vapor pressure that assures fast uniform development.

Rotating brush feed that smooths out the original, even if it has been tightly rolled for months.

Positive pickoff with new plastic fingers that easily and smoothly lift prints off the printing cylinder.

Tracing receiving tray especially designed for use with roll stock.

New print pickoff that lifts off the finished print with compressed air.

New mercury lamp prints more efficiently, and uses less current.

Twin blowers that dissipate heat and vapor, make the operation of the 810 cool and easy.

Electronic controls that automatically synchronize vapor circulation to the machine speed; with separate manual controls for certain types of printing.

Front stacker that handles prints as large as 42 by 24 inches. Optional rear delivery for prints as large as 36 by 42 inches.

Ask your nearest Ozalid distributor to show you what the new Printmaster 810 can do for you. Or write 150 Ozaway, Johnson City, N. Y. In Canada, the Hughes Owens Company, Ltd., Montreal.

OZALID—A Division of General Aniline & Film Corporation . . .
From Research to Reality

OZALID

ROOF GIRDER (above) was deflection tested under 23-ton hydraulic load. It bent 5½ in., returned to level when load was released. Then a destruction test (left) showed the 60-ft girder could take nearly three times its design load.

ROOF SLAB—A double tee slab, 45 ft long by 5 ft wide, was tested to destruction by a loading of cement bags (right). It refused to break at 122.5 lb per sq ft, more than four times the design load.

A Pitch for Pretensioned Concrete

The advocates of pretensioned prestressed concrete are convinced of its cost and strength advantages. But when a prestressed concrete fabricator starts business in a new area, acceptance is generally slow.

That's why newly formed Rockwin Prestressed Concrete Corp., of Norwalk, Calif., put on a show before a large group of southern California architects, contractors, safety engineers, and government officials (pictures).

The results were impressive. After the tests, the company (whose board chairman is Winthrop Rockefeller) decided to add four new pretensioning benches. So far, it's the only one of its kind around Los Angeles.

Canadian Cement

Capacity is scheduled to climb by 10,000,000 bbl

Present plans to build new cement plants in Canada will increase capacity by about 10,000,000 bbl a year, if all projects go through. An ENR survey indicates there would be a gain of 40% over Canada's present annual capacity of 25,000,000 bbl.

The major producer is Canada Cement Co., of Montreal, which has an annual capacity of about 19,000,000 bbl in plants located in most parts of Canada. Canada Cement has three more plants under construction in the provinces of Ontario, Manitoba, and Alberta.

British Columbia Cement Co., controlled by British interests, has a plant at Bamberton, B. C., now under expansion to 3,200,000 bbl a year. St. Mary's Cement Co., at St. Mary's Ontario, is a Canadian concern with a capacity of 1,400,000 bbl a year.

• **Foreign interests**—At Corner Brook, Newfoundland, North Star Cement Co. has a plant built in 1951 with 600,000 bbl capacity. Belgian interests have set up Inland Cement Co. at Edmonton, which is building a $7-million plant with 800,000 bbl capacity. St. Lawrence Cement Co., owned by Swiss cement interests, has a new 1,500,000 bbl plant near Quebec. It's planning a $15-million plant of similar capacity at Clarkson.

Two other British groups plan new plants. International Cement Co. will build a $5-million plant at Chilliwack, British Columbia, for export to South America. Associated Portland Cement Manufacturers Group plans a $20-million facility near Toronto.

A U. S. firm, Inland Cement Co. of Denver, is planning a new plant near Vancouver.

Permanente to Move Into Southern California Market

Permanente Cement Co., of Oakland, Calif., will expand into southern California by building a $12-million plant of 2,000,000 bbl capacity. Bids will be invited soon, and the new mill is expected to start operating next fall.

It's possible that Permanente may activate its Long Beach distribution plant, a 60,000-bbl facility that is equipped to handle bulk cement ships. The company has plants at Honolulu, Portland, and Seattle that are served by bulk carrier ships.

Activity This Week

As reported to ENR
(In millions of dollars)

Amount of contracts let

(millions of dollars)

	This Week	Cumulative 31 wks 1955	1954	% chge
By Ownership				
Federal	$14.8	$1,120.3	$762.8	+47
State and municipal	111.7	3,182.5	2,878.5	+11
Total public	126.5	4,302.8	3,641.3	+18
Total private	191.2	7,123.2	4,806.0	+48
U. S. Total	$317.7	$11,426.0	$8,447.3	+35
By Type of Work				
Waterworks	$2.9	$156.6	$133.7	+17
Sewerage	8.1	231.1	229.3	+1
Bridges	10.5	287.4	279.4	+3
Highways	30.3	1,280.6	1,077.0	+19
Earthwork, waterways	3.1	321.8	168.1	+91
Buildings:				
Public, excl. housing	35.5	1,057.8	1,066.3	−1
Public housg.	0.5	165.4	154.8	+7
Private housg.	108.5	3,928.2	2,621.7	+50
Commercial	21.4	1,057.2	748.3	+41
Industrial	44.5	1,645.5	1,193.5	+38
Unclassified	52.4	1,294.4	775.2	+67
U. S. Total	$317.7	$11,426.0	$8,447.3	+35

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

New capital for construction

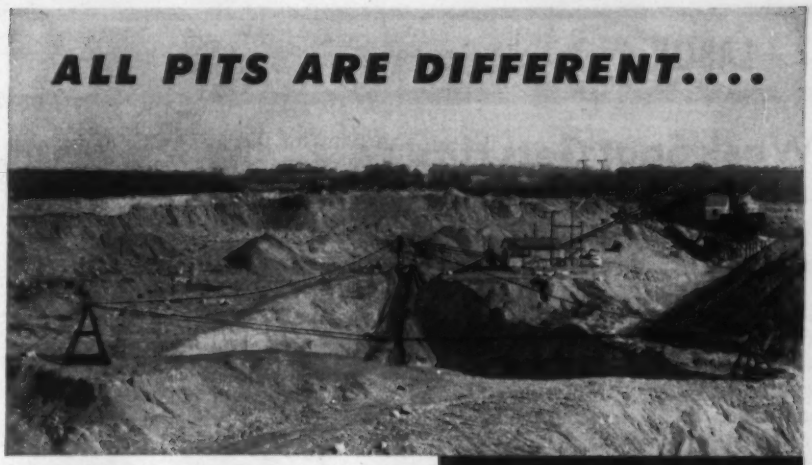
(millions of dollars)

	Week of July 28	Cumulative 30 Wks 1955	% Chge '54-'55
Corporate securities	$81.2	$2,073.6	+9
State and municipal:			
All except housing	83.7	2,524.6	−25
Housing	...	63.2	−9
Federal loans	1.1	79.8	+5
Federal aid	...	742.5	+18
Total nonfederal	166.0	5,483.7	−9
Federal appropriations:			
In U. S.	59.7	516.1	−54
Outside U. S.	3.0	46.9	+65
Total new capital	$228.7	$6,046.7	−16

ENR cost and volume indexes, 1955

		Base years = 100 1913	1926	1949
Construction cost	7/28/55†	672.24	343.15	140.92
	6/30/55†	660.09	317.31	138.38
Building cost	7/28/55†	478.03	258.41	135.89
	6/30/55†	467.52	252.73	132.90
Volume	July	699	284	202
	June	633	257	183

† Official monthly indexes for July & Aug.



3-cu. yd. rapid shifter

THAT'S WHY
SAUERMAN SCRAPER MACHINES ARE JOB-ENGINEERED FOR YOUR PLANT

Your deposit may require a manually-shifted tail and bridle system or it may need a rapid shifter to make the many moves necessary in shallow pit operation or handling of non-caving material. If large capacities and long hauls are involved, a Sauerman Track Cable machine may best suit your needs. In the latter arrangement, the scraper bucket is attached by chains to a carrier traveling on a track cable. The bucket conveys its load at ground level and is discharged at the dumping point by merely tightening the track cable. Bucket and carrier guide glide back to the digging point at high speed when brake is released.

5-cu. yd. track cable scraper

Sauerman scrapers work equally well on hills, boggy ground or in deep water. One man controls digging, hauling and dumping from a safe location, which may be as much as 1,000 ft. from the deposit. Sauerman machines cost less than many other types of excavators of similar capacities. Operating costs are very low, because you eliminate the power cost involved in moving heavy machinery around the area. A drag scraper maintains its efficiency for many years. When parts are replaced—sheaves, clutch or brake linings—the machine is restored to practically new condition, even though it may be twenty or more years old.

Write to Sauerman's experienced engineers about your plant

They will give you specific recommendations without obligation. Request *Catalog A, Drag Scrapers*—24 pages of job photos and specifications.

SAUERMAN BROS. INC.
632 S. 28th Ave., BELLWOOD, ILL.

Weak Spot Gets Hit

Sand and concrete strikes slow down construction

While contractors were being squeezed by a critical shortage of cement in various sections of the country, scattered strikes at sand, gravel and ready-mix concrete plants continued to threaten and halt construction in several areas.

In California, Arizona and New York, breakdowns in contract negotiations were followed by work stoppages, directly or indirectly affecting thousands of construction workers. Unions involved included operating engineers, teamsters and laborers.

• **California**—Last week found many contractors on the San Francisco Peninsula mixing their own concrete at construction sites. Thirty ready-mix concrete plants, operated by members of the Northern California Ready-Mixed Concrete and Materials Assn., were closed. Plants that didn't automatically shut down after the operating engineers walked off their jobs were picketed.

Union demands were steep: a 25-cent increase in basic pay, a $2.00 monthly health and welfare contribution, two extra holidays, an increase in rate for overtime pay, and jurisdictional control over maintenance and repair of machinery run by members of the union.

Contractors agreed to meet the health and welfare and holiday demands. But they bucked on the overtime and basic pay issues. They offered, instead, to grant an increase of 12.5 cents, retroactive to June 1, with 2.5 cents more on Dec. 1 and another 12.5 cents next June 1.

• **Arizona**—The principal dispute in Arizona was with the Arizona Sand and Rock Co. in Phoenix. The hitch occurred in wage rates for engineers, teamsters and laborers to be paid under the new four-year contract which will replace the old five-year contract that expired July 1.

What the unions sought was elimination of the differentials that exist in rates for construction work and for work in sand and gravel companies. Shovel operators in a gravel pit, for example, are paid $2.43, while similar work on a construction job pays $2.75 (after Oct. 1, it will be $3.03).

Employers offered basic wage increases ranging from 10 to 32.5 cents an hour for the first year. Additional increases of 7 to 11 cents an hour would be paid each succeeding year.

Over 500 workers were directly affected by the strike. Another 10,000 were idled by contractors who were forced to shut down their operations when supplies of concrete and sand for plaster failed.

• **New York**—Buffalo's multi-million-dollar commercial and residential construction industry was seriously crippled when three locals of the operating engineers struck five ready-mix concrete plants and three gravel pits. Principal stumbling block was the union's demand that hospital insurance be paid by the employers.

Although the strike threatened to be the most serious yet faced by the strike-torn area, it proved to be short-lived, and ended in what has been termed a "satisfactory agreement."

New York Winds Up

Majority of the contracts follow 45-cent pattern

By the end of last week, the New York City building trades had virtually completed their 1955 contract negotiations, which have been in progress since last March. In all, 32 contracts had emerged, leaving only the plumbers still to sign.

Nearly two-thirds of the new agreements run for a period of two years and most of these follow the 45-cent package pattern established last month when six of the trades threatened to strike if settlements were not reached before the old contracts expired (ENR, July 7, p. 80). Except for one three-year contract with the structural ironworkers, the rest of the contracts are for one year only and grant increases ranging from 10 cents (plus 2% in fringe benefits) to 20 cents.

Wage talks with the plumbers, whose contract expired June 30, were held off until the new Plumbing Contractors Association of the City of New York, Long Island and Westchester County, Inc., was organized. Headed up by John P. Garofolo as president, the new group began to negotiate last Friday with five local unions for a single, uniform agreement, covering the five boroughs of New York and two Long Island counties and eliminating existing differentials in wage rates, fringe benefits and working conditions.

In the course of their negotiations, three of the trades—boilermakers, boilermakers helpers and structural ironworkers—bettered the 45-cent pattern. Two came out with a 50-cent increase in basic rates, spread over the two-year period, and one with a 65-cent boost for the next three years. The first two get a 15-cent raise now, 10 cents next January, 15 cents next July and another 10 cents the following January. Increments for the ironworkers are 10, 10, 20 and 10, in that order, with another 15 cents on July 1, 1957 for the third year of the contract—making their basic rate $4.30 at that time.

Since emphasis was on boosts in basic rates, fringe benefits played a minor role in most of the negotiations. Existing fringe benefits were retained in many cases without change.

Of the unions that followed the 45-cent pattern, however, two will take the January 1956, 10-cent increase in the form of contributions to the welfare and pension funds; five have the option of taking the same increase in wages, or getting, instead, 3% of pay in the form of fringe benefits; and two have the option of allocating one or more of the increases between basic pay and fringe benefits.

Under the new contracts, present scales (basic rates) for the building trades range from a low of $2.40 for excavating laborers to a high of $3.90 for stone setters. Fringe benefits exist in various combinations. Excavating laborers, for example, get 5% for the welfare fund and 3% for the pension fund (the latter in lieu of 6 paid holidays); stone setters get a 6% welfare fund contribution; and plasterers, with a basic rate of $3.85, receive contributions of 20 cents for the benefit fund, 15 cents for the welfare fund, and 15 cents for the pension fund.

Labor Briefs . . .

• **Carpenters in plastics**—The International Brotherhood of Carpenters & Joiners, AFL, has chartered a local of plastic workers at Bellingham, Wash. Charter members are 20 men employed in commercial plastics work and the plastic pleasure-boat construction by the Bellingham Shipyard Co.

• **End glaziers' strike**—AFL glassworkers and glaziers ended a 32-day strike against 16 Denver and four Pueblo, Colo., firms, and accepted a two-year contract. They get a 13-cent boost now, and another 10 cents next year.

OFFICIAL PROPOSALS

Bids: August 18, 1955

New Jersey Turnpike Authority

CONTRACT NO. N-PE-32

Sealed proposals are invited for Contract No. N-PE-32 for the furnishing and installation of the toll booths and canopies for the Interchanges on the Newark Bay-Hudson County Extension in Essex and Hudson Counties, and the Pennsylvania Extension in Burlington County, of the New Jersey Turnpike.

The principal items of work include:

- 44 Toll Booths and Associated Canopies, Counterwork and Informational Signs
- 1 Portable Toll Booth and Portable Island complete with Toll Registry Equipment
- 6 Flagpoles attached to Canopy Structures
- 24 Sets of Interchangeable Informational Signs for new Toll Booths
- 26 Sets of Interchangeable Informational Signs for Existing Toll Booths
- 585 Traffic Cones

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, N. J., until 11:00 O'Clock, Daylight Saving Time, on the morning of August 18, 1955, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract Documents may be examined during office hours after July 28, 1955, at the office of the Authority, and at the office of the Consulting Architects, Lorimer & Rose, 254 West 54th Street, New York 19, N. Y. Contract Documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. Contract Documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

July 27, 1955

Bids: August 25, 1955

Refuse Incinerating Plant Extension Arlington County, Va.

ADVERTISEMENT FOR BIDS

Sealed proposals for furnishing all materials and equipment and doing all work required for General Construction—Refuse Incinerating Plant Extension, as described below, will be received by the Purchasing Agent in Room 213, in the Court House Building at Arlington County, Virginia, until 11:00 A. M., Eastern Daylight Saving Time, on AUGUST 25, 1955, and there publicly opened and read immediately thereafter:

CONTRACT D.
GENERAL CONSTRUCTION—REFUSE INCINERATING PLANT EXTENSION:

1. Location: The work is located in Arlington County, Virginia at S. Eads Street and 31st Street S.
2. Type Of Work: The principal items of work include the following:
   Construction of an extension to the existing Refuse Incinerator Plant, including excavation, concrete and brick masonry, structural steel, miscellaneous piping and appurtenances, electrical work, paving, fencing, planting and grassing.
   Approximate quantities for the major items of the work are as follows:
   Excavation .....1000 Cu. Yds.
   Reinforced Concrete .....1500 Cu. Yds.
   Structural Steel .....200 Tons
   Superstructure Masonry 16,000 Cu. Ft.
   Roofing .....1100 Sq. Yds.
3. Copies of Plans and Specifications, Information for Bidders, Bid Forms and other bidding and contract documents may be examined at the Office of the Sanitary Engineer, Sanitation Division, County Court House, Arlington, Virginia; at Dodge Reports, 900 F. Street, N.W., Washington, D. C. and at the Office of Alexander Potter Associates, Consulting Engineers, 50 Church Street, New York 7, N. Y.
4. Copies of Plans, Specifications and Bidding Documents may be obtained from the Purchasing Agent in Room 213, Court House Building at Arlington, Virginia upon a Deposit of FORTY ($40.00) DOLLARS PER SET.
   Full refund will be made to actual bidders for return of One (1) Set, in good condition, within two weeks after closing date for receipt of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty (50%) Percent of the Deposit. No refund will be made for return of documents in poor condition or later than the two week period stipulated.
   All bids must be on the form contained in the Contract and Specifications.
   Contractors, whether resident or non-resident in Virginia will be required to show evidence of a certificate of registration as required by Chapter 7 of Title 54 of the Code of Virginia before their Bids will be considered, if the Bid is $20,000 or more.
   All bids must be accompanied by a Certified Check or acceptable Bidder's Bond in an amount of not less than Five Per Cent (5%) of the amount of the Bid, made payable to the Treasurer of Arlington County, as bid security.
   The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the contract, and upon payment of all persons supplying labor and furnishing materials on the construction of the work.
   No bidder may withdraw his Bid within Thirty (30) Days after actual date of opening thereof.
   The County Board of Arlington County, Virginia, reserves the right to reject any or all bids and to waive any informality in the bids.

ARLINGTON COUNTY, VIRGINIA
By: A. T. Lundberg
County Manager

Bids: August 17, 1955

Proposal No. 652

THE PORT OF NEW YORK AUTHORITY
FOUR (4) TUNNEL PATROL WAGONS
HOLLAND AND LINCOLN TUNNELS

Sealed proposals for furnishing four (4) tunnel patrol wagons for use in the Holland and Lincoln Tunnels will be received at the office of the Director of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Ave., New York 11, until 11:00 A. M. (E.D.T.) on Wednesday, August 17, 1955, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase and Administrative Services.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

Bids: August 23, 1955

Contract NYA-690.001

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
GARAGE AND PARKING FACILITIES

Sealed proposals for the construction of a garage and parking facilities for fuel trucks at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, August 23, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 4, 1955

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4480) will be received at Kirwin, Kansas, until September 15, 1955, for furnishing labor and materials for earthwork and structures, Kirwin Main Canal, Station 0+08 to Station 706+01, Kirwin lateral system, and drains, Kirwin Unit, Solomon Division, Kansas, Missouri River Basin Project. Location near Kirwin, Kansas. Principal items are 970,000 cu. yds. excavation; 48,000 cu. yds. earth lining for canal; 2,200 cu. yds. concrete in structures; 9,700 lin. ft. concrete pipe; 24,000 pounds metalwork; and other work. Completion time 540 days. For particulars, address Bureau of Reclamation, P.O. Box 317, Kirwin, Kansas; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4482) will be received at Loveland, Colorado, until September 1, 1955, for furnishing labor and materials for Green Mountain Switchyard Modifications, Colorado-Big Thompson Project, Colorado. Location near Kremmling, Colorado. Principal items are constructing concrete footings; modifying and furnishing and erecting steel structures; installing power transformer and high speed grounding switch; all required electrical work to complete substation modifications; and other work. Completion time 75 days. For particulars, address Bureau of Reclamation, P. O. Box 449, Loveland, Colorado; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4485) will be received at Lindsay, California, until September 15, 1955, for furnishing labor and materials for Radial Gate Check—Station 7371+50, Friant-Kern Canal, Central Valley Project, California. Location near Shaffer, California in Kern County. Principal items are excavation, 1,650 cu. yds.; concrete in structures, 480 cu. yds.; furnishing and installing three radial gates; and other work. Completion time 250 days. For particulars, address Bureau of Reclamation, P. O. Box 525, Lindsay, California; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4472) will be received at Denver, Colorado, until August 16, 1955, for furnishing and installing new generator armature winding for one of the existing generators of the Shasta Power Plant, Central Valley Project, California. Location near Coram, California. Completion time 120 days. For particulars, address Bureau of Reclamation, P. O. Box 471, Redding, California; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4484) will be received at Boise, Idaho, until September 7, 1955, for furnishing labor and materials for Face Rehabilitation, Black Canyon Dam, Boise Project, Idaho. Location near Emmett, Idaho, in Gem County. Principal items are 2,350 sq. yds. excavation of existing concrete 3 inches and less in depths; 110 cu. yds. excavation of existing concrete more than 3 inches in depth; 1,150 cu. yds. concrete in face slabs; and other work. Completion time 500 days. For particulars, address Bureau of Reclamation, 214 Broadway, Boise, Idaho; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

New York State Road Works

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, N. F. Ronan, Acting District Engineer, 353 Broadway, Albany, N. Y.						
Albany	FARC 55-55	Altamont Village, S.H. 849 Dunnsville-Altamont, S.H. 1279 Proj. No. S427(2)	0.96	9" Cem. Conc. Pavt. 24'-38' Wide.	$18,000 Plans $10	$324,000
Albany	T.C. 55-2	Albany-Watervliet, S.H. 977 Loudonville-Menands, S.H. 1879 Troy-Menands Bridge and Approach, S.H. 9112	0.60	Traffic Signal System	$1,300 Plans $10	23,000
Saratoga	FASH 55-1	Bemis Heights-Schuylerville Proj. No. F391(10)	9.61	9" Cement Concrete Pavt. 24' Wide=9.56 Mi. Misc. Work=0.05 Mi. Comp. I-Beam Bridge 332'	$122,000 Plans $25	$2,212,000
Schenectady	ST 55-4	New York State Thruway-Mohawk Section, Sub. 1-1 (Dahlia Road Extension)	0.40	Bit. Mac. Type 1 (Pen. Method)	$1,100 Plans $10	21,000
Schenectady	M 55-2	Lock 8, Erie Canal, Scotia		New Upper and Lower Gates; Reconstruct a Lower Sill; Plating of Portions of Walls	$9,000 Plans $10	161,544
Washington	FARC 55-57	Thomson-Ft. Edward, Pts. 1 & 2, S.H. 1685A Proj. No. F391(11)	8.93	Asp Conc. Opt.	$45,000 Plans $50	976,000
DISTRICT No. 2, Lacy Ketchum, District Engineer, 109 No. Genesee St., Utica, N. Y.						
Oneida	FGRC 55-64 FARC 55-65 FASH 55-8	Marcy Hill-Trenton, S.H. 931; Trenton-Remsen, S.H. 1144; Trenton-Prospect-Remsen, S.H. 5345; Trenton By-Pass, Proj. F-FG-752(5); S-281(3)	5.61	9" Cement Conc. Pavt. 2 @ 24' Wide=3.69 Miles Asp. Conc., Opt.=1.92 Miles 1 RR Sep. Plate Girder 78 3 Brs. Comp. I-Beams 124', 74' and 175' 1 Br. R. C. Arch 40' 1 Hy. Sep. Comp. I-Beam 147.5'	$180,000 Plans $50	3,268,000
DISTRICT No. 3, Wm. Robinson, District Engineer, Weigh Lock Building, Syracuse, N. Y.						
Cortland	FARC 55-58	Blodgett Mills-Cortland, S.H. 881 Proh. F-481(6)	0.18	Asp. Conc., Opt. R.C. Slab Br. Twin 35' Spans	$7,000 Plans $10	120,000
Oswego	FAC 55-15	City of Oswego. East River Road and East First Street Proj. U-583(6)	2.17	9" Cement Conc. Pavt. 24'-48' Wide	$27,000 Plans $10	$486,000
Seneca	O.T. 55-8	New York State Thruway-Ontario Section-Sub. 1 (Junius Pond Gas Station-Restraurant Site)	....	Planting Trees, Shrubs and Vines	$110 Plans $10	2,000
DISTRICT No. 4, B. F. Perry, Acting District Engineer, Barge Canal Terminal, Rochester, N. Y.						
Monroe	FASS 55-1	East River Road (County Road) Proj. S-334(1)	0.56	Asp. Conc., Opt =0.53 Mi. Misc. Work=0.03 Mi. Comp. I-Beam Br. 146'	$12,000 Plans $10	223,000
Orleans	FARC 55-9	Yates-Lyndonville-Ridgeway, S.H. 581 Proj. S-407(1)	1.04	Asp. Conc. Ty. 2A=1.00 Mi. Misc. Work=0.04 Mile	$12,000 Plans $10	224,000
Wyoming	FARC 55-54	Alden-Cowlesville, Pt. 2, S.H. 9040 Bennington-Attica, Pt. 1, S.H. 9042 Proj. S-406(1)	0.70	Asp. Conc., Opt.=0.59 Mi. Misc. Work=0.11 Mile 2 Conc. Box Brs. 27' & 25'	$17,000 Plans $10	286,000
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, 65 Court Street, Buffalo, N.Y.						
Cattaraugus	FARC 55-69	Ellicottville-Machias, Pt. 1, S.H. 9212 Proj. F-603(6)	0.45	Asp. Conc. Opt.=0.25 Mile Misc. Work=0.20 Mile 2 Comp. I-Beam Brs. 66' & 66'	$13,000 Plans $10	232,000
Chautauqua	E.T. 55-4 S.T. 55-6	New York State Thruway-Erie Sect.-Subd. E-1B (Barden Rd. to Westfield) and 5 Marginal or Cross Roads	5.32 (Acc.) (1.94)	Two crse. Cement Conc. Pavt.=5.12 Mi. Cement Conc. Pavt. Br.=0.12 Mi. Bit. Mac. Ty. 1=1.44 Mi. B.S.T. Graded Grav.=0.48 Mi. Misc. Work=0.06 Mi. 4 Hy. Seps. Comp. I-Beams 338.2', 275.5', 364.5' & 412.3' 1 R.C. Rig. Fr. Br. 62.8' 1 Comp. I-Beam Br. 430'	$272,000 Plans $100	4,950,000
Chautauqua	E.T. 55-5 S.T. 55-7	New York State Thruway-Erie Sect.-Subd. E-2A (Westfield to West Forest Road); Westfield Interchange and 3 Secondary Cross Roads	4.73 (Acc.) (2.88)	Two Crse. Cem. Conc. Pavt.=6.32 Mi. Cem. Conc. Pavt. Br.=0.13 Mi. Asp. Conc. Ty. 2B=0.25 Mi. Bit. Mac. Ty. 1=0.63 Mi. Misc. Work=0.28 Mi. 5 Hy. Seps. Comp. I-Beams 249.8', 254.3', 257.4', 192' & 184.6'	$215,000 Plans $100	3,925,000
Erie	E.T. 55-3 S.T. 55-5	New York State Thruway-Erie Sect.-Subd. E-7B (Shadagee Road and Eighteen Mile Creek Bridge and Approach); Shadagee Road,	0.40	Two Crse. Cem. Conc. Pavt.=0.17 Mi. Cem. Conc. Pavt. Br.=0.12 Mi. Asp. Conc. Opt.=0.11 Mi. Deck Girder Br. 652' NB and 630' SB	$110,000 Plans $15	1,941,000
Erie	E.T. 55-6 S.T. 55-8 R.C. 55-71	New York StateThruway-Erie Sect. Subd. E-8A(Camp Road to Bayview Road); Camp Road Interchange; Athol Springs-Hamburg, S.H. 1067; Buffalo-Hamburg, S.H. 2. and 3 Secondary Cross Roads	2.33 (Acc.) (4.59)	Two Crse. Cem. Conc. Pavt.=5.52 Mi. Cem. Conc. Pavt. Br.=0.25 Mi. Asp. Conc. Opt.=0.99 Mi. Misc. Work=0.16 Mi. 5 Hy. Seps. Comp. I-Beams 260.5', 291.5', 254.8', 355.8' and 158.7'	$185,000 Plans $50	3,350,000
Niagara	FARC 55-68 FASH 55-9	McNalls-Alabama, Pt. 1, S.H. 9338 McNalls-Alabama, Pt. 1A, Proj. S-457(1)	3.88	Asp. Conc., Opt.=3.85 Mi. Misc. Work=0.03 Mi.	21,000 Plans $15	380,000
Niagara	FARC 55-61	North Tonawanda-Sanborn, Pts. 1 & 2 S.H. 643 Proj. S-390(1)	3.15	Asp. Conc., Opt.=3.13 Mi. Misc. Work 0.02 Mi. Widening Exist'g. R.C. Slab Br.	$28,000 Plans $15	482,000
Erie & Niagara	M 55-3	Bush's Bridge E-243 East Robinson Street Extension	0.40	Asp. Conc. Opt.=0.21 Mi. Misc. Work=0.19 Mi. Plate Girder Br. 351'	$26,000 Plans $25	472,400
DISTRICT No. 6, J. H. Thomas, District Engineer, 30 West Main St., Hornell, N. Y.						
Chemung	FASS 55-6	Chemung-Van Etten, C.R. 3 Proj. S-86(3)	1.71	Bit. Double Surface Treatment 2 Comp. I-Beam Brs. 60' & 60'	$19,000 Plans $15	345,000
Steuben & Yates	FARC 55-62	Wayne-Keuka-Penn Yan, Pt. 1, S.H. 1779 Keuka-Penn Yan, Pts. 2 & 3, S.H. 8435, 8523 Proj. F-529(6)	8.62	Asp. Conc., Opt. I-Beam Br. 34' (Widen)	$90,000 Plans $50	1,553,000
Tioga	FASS 55-2	Berkshire-East Berkshire, Co. Rd. 202 Proj. S-302(1)	0.14	F.C. Grav. Bit. D.S.T. Comp. I-Beam Br. 158'	$7,500 Plans $10	136,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee St., Watertown, N. Y.						
St. Lawrence	FARC 55-70	Gouverneur-Edwards, Pts. 1 & 2 S.H. 1263-1389 Proj. S-441(1)	3.96	Asp. Conc., Opt.=3.74 Mi. Misc. Work=0.22 Mi.	$40,000 Plans $25	727,000
St. Lawrence	FASH 55-7 FARC 55-60	Massena South Side Route, Pt. 2 (Contract 1) Massena-Helena, Pt. 1, S.H. 1261 Proj. U-UG-580(9)	5.02	Asp. Conc., Opt.=5.00 Mi. Misc. Work=0.02 Mi. RR Sep. I-Beam 205.3'	$90,000 Plans $25	1,651,000
DISTRICT No. 8, J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Orange	C.T. 55-9	New York State Thruway-Catskill Section-Subd. 6 (Harriman Maint. Bldg. Site)	....	Grading, Paving & Misc. Work	$2,500 Plans $10	44,000
Orange	C.T. 55-10	New York State Thruway-Catskill Section-Subd. 5 (Newburgh Maint. Bldg. Site)	....	Grading, Paving & Misc. Work	$2,800 Plans $10	48,000
Putnam	FARC 55-66 FGRC 55-67	Brewster-Carmel, S.H. 909 Proj. F-FG-590(2)	2.09	9" Cem. Conc. Pavt. 24' Wide=2.05 Mi. Misc. Work=0.04 Mi. Comp. I-Beam Br. 130' RR Sep. Comp. I-Beam 180'	$60,000 Plans $15	1,112,000
Rockland	FARC 55-56	Suffern-Mt. Ivy, S.H. 1448 Proj. F-637(3)	1.60	9" Cem. Conc. Pavt. 24' Wide=1.58 Mi. Misc. Work=0.02 Mi.	$35,000 Plans $10	644,000
Ulster	FASS 55-4	Rosendale-Tillson, C.R. 113 Proj. S-423(1)	0.08	Asp. Conc., Opt. Comp. Girder & R.C. Slab Br. 153.3'	$15,000 Plans $10	275,000
Westchester	H.T. 55-6	New York State Thruway-Hudson Section-Subd. 10 (Ardsley Gas Station-Restaurant Site) (Type CM)	....	Grading, Paving & Misc. Work	$9,000 Plans $10	156,000
DISTRICT No. 9, F. W. Donovan, District Engineer, 71 Frederick St., Binghamton, N. Y.						
Delaware, Otsego, & Schoharie	R.C. 55-59	Br. No. 1 & Br. No. 2, S.H. 982; Br. No. 1, S.H. 5384; Br. No. 2, S.H. 239; Br. No. 1, S.H. 987-A; Br. No. 1, S.H. 5195; Br. No. 2, S.H. 8270; Br. No. 1, S.H. 1215; Br. No. 1, S.H. 5458	....	Cleaning & Painting 9 Bridges	$1,500 Plans $10	26,000
Sullivan	R.C. 55-63	Narrowsburg-Callicoon, Pt. 3, S.H. 8449 Callicoon-Long Eddy, Pt. 2, S.H. 8494	0.32	Repair, Clean & Paint 2 Bridges	$2,500 Plans $10	46,000
DISTRICT No. 10, M. E. Goul, District Engineer, Montuck Highway at Little East Neck Road, Babylon, L. I., N. Y.						
Bronx	FACBE 55-1	Cross Bronx Expressway Cont. 1C (Anthony Ave.-Longfellow Ave.) Proj. IN-1084(21)	1.22	Demolition of Buildings	$40,000 Plans $10	760,000
Nassau	PSC 7278-8966	Elimination of Grade Crossings of the Long Island Railroad with Various Streets in the Hamlet of Baldwin and Village of Freeport	0.35 (1.56) (RR)	Railroad Relocation=1.56 Mi. Asp. Conc. Opt.=0.26 Mi. Cem. Conc. Pavt.=0.09 Mi. 4 Plate Girders 86', 85.5', 69' & 76.5' 1 Viaduct and Station 920'	182,000 Plans $100	3,337,000

OFFICIAL PROPOSALS

Bids: August 25, 1955

New York State Road Works

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 25th day of August 1955, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions apply to projects financed with federal funds.

Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

CONTRACTORS
WATCH
THIS SECTION

for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

Bids: August 31, 1955

Pennsylvania Turnpike Commision
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Daylight Saving Time, the 31st day of August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the provision and installation of a Tunnel Ventilation System and a Carbon Monoxide Analyzing System in the North and South Portal Buildings of the T. J. Evans Tunnel, Contract 518-B, part of the Northeastern Extension of the Pennsylvania Turnpike in Lehigh and Carbon Counties, Commonwealth of Pennsylvania, the project being situated as follows:

The South Portal Building and adjacent Cut and Cover Tunnel Section is approximately 2,703 lineal feet northwest of the center line of Legislative Route 39119 between Turnpike Stations 1342+50 and 1343+76.31 in Washington Township, Lehigh County, and the North Portal Building and adjacent Cut and Cover Tunnel Section is approximately 4,582 lineal feet southeast of the center line intersection of the Turnpike and the Lehigh and New England Railroad between Turnpike Stations 1384+77.20 and 1385+91.69 in East Penn Township, Carbon County.

Bids are to be submitted on a lump sum basis.

Copies of plans, specifications and other contract documents, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania on August 4, 1955. Plans, specifications and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy.

Plans and contract documents for this section, exclusive of specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty-five (25) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
25 July 1955

U. S. Government

Department of Commerce, Bureau of Public Roads, July 22, 1955. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D.S.T., AUGUST 18, 1955, for Project 1A6, Colonial Parkway, Viaduct over Yorktown Creek, York County, Virginia. Construction of Steel Superstructure with Concrete Floor on Concrete Piers and Brick-faced Abutments, and other work. Length: 0.059 mile. The approximate quantities of the more important items are: 730 cu. yd. Concrete, 110,000 lb. Reinforcing Steel, 300,000 lb. Structural Steel and 130 cu. yd. Brick Masonry. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above or Bureau of Public Roads, 920 South Jefferson Street, Roanoke, Virginia. H. J. Spelman, Division Engineer.

U. S. Government

Department of Commerce, Bureau of Public Roads, July 25, 1955. SEALED BIDS will be received at the office of the Bureau of Public Roads, First National Bank Building, Florence, Alabama, until 10:00 a.m., C.S.T., AUGUST 26, 1955, for Project 3H2, 3, 5, Natchez Trace Parkway, Choctaw County, Mississippi. Three reinforced concrete slab bridges, and approaches. Aggregate length: 0.157 mile. The approximate quantities of the more important items are as follows: 11,510 cu. yd. Excavation and Borrow, 1,397 cu. yd. Concrete, 212,000 lb. Reinforcing Steel, and 7,650 lin. ft. Treated Timber Piles. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above, or Bureau of Public Roads, 1440 Columbia Pike, Arlington 4, Virginia. H. J. Spelman, Division Engineer.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4477) will be received at Albuquerque, New Mexico, until August 16, 1955, for furnishing labor and materials for earthwork, clearing and structures for Rehabilitation of Drains—Unit AE-3, Middle Rio Grande Project, New Mexico. Location near Albuquerque in Bernalillo and Sandoval Counties. Principal items are 16,230 cu. yds. excavation; 8,560 cu. yds. backfill; 2,750 lin. ft. furnishing and laying corrugated metal pipe; 22 miles clearing and cleaning drains; and other work. Completion time 270 days. For particulars, address Bureau of Reclamation, P. O. Box 252, Albuquerque, New Mexico; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4478) will be received at Albuquerque, New Mexico, until September 13, 1955, for furnishing labor and materials for earthwork, clearing, and structures for rehabilitation of drains, Units BW-3 and SW-3, Middle Rio Grande Project, New Mexico. Location south of Albuquerque, New Mexico. Principal items are lump sums clearing and cleaning drains; 115,000 cu. yds. excavation; 5,300 lin. ft. corrugated-metal pipe; and other work. Completion time 260 days. For particulars, address Bureau of Reclamation, P. O. Box 252, Albuquerque, New Mexico; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4451) will be received at Glendo, Wyoming, until September 7, 1955, for furnishing labor and materials for additions to Casper Substation, Kendrick Project, Wyoming. Location near Casper, Wyoming. Principal items are 610 cu. yds. excavation; 185 cu. yds. concrete; 70,000 pounds furnishing and erecting steel structures; 575 lin. ft. installing coaxial cable; and other work. Completion time 270 days. For particulars, address Bureau of Reclamation, Building 46, Denver Federal Center, Denver, Colorado; P. O. Box 127, Glendo, Wyoming; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal Advertising is $1.80 per line (or fraction) per insertion.

COPY RECEIVED: up to 10:30 A.M. Friday for issue out following Thursday subject to space open for last minute ads.

SEND COPY: to Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: September 15, 1955

Primera Central Hidroelectrica Cubana (Prichec)

UNDERGROUND EXCAVATION AND APPURTENANT WORK
CONTRACT C-1

Sealed bids for Underground Excavation and Appurtenant Work for the Hanabanilla Project will be received by the Primera Central Hidroelectrica Cubana, hereinafter referred to as PRICHEC at Edificio de la Lonja Del Comercio, Sexto Piso, Havana, Cuba, until 10:00 AM Eastern Standard Time (11:00 AM Eastern Daylight Saving Time) on September 15, 1955, at which time the bids received in Havana will be opened. Bidders are also required to send a sealed copy of the bid, for receipt not later than 10:00 AM Eastern Standard Time (11:00 AM Eastern Daylight Saving Time) on September 15, 1955 to Knappen-Tippetts-Abbett-McCarthy, Engineers, hereinafter referred to as the Engineer, at 62 West 47th Street, New York 36, New York, U. S. A.

This Underground Excavation contract is one of several construction contracts expected for completion of the Hanabanilla project, a hydroelectric dam and power plant development located at the Hanabanilla River about 50 kilometers east of Cienfuegos, Cuba.

The work in the Underground Excavation contract includes the following principal features.

a. Excavation for intake channel, intake tower, penstock shaft, service tunnel, powerhouse, valve chamber and tailrace tunnel 6.7 kilometers in length.
b. Construction of reinforced concrete lining for service tunnel, powerhouse cavern and valve chamber roofs, and tailrace tunnel as required.
c. Consolidation and contact grouting required for a. and b.
d. Disposal of excavated materials.
e. Care of water during construction.
f. Structural steel roof supports, steel roof bolts, and dry packing.

Approximately 75,000 cubic meters of open cut excavation, 150,000 cubic meters of underground excavation and 20,000 cubic meters of concrete are involved.

Contract Documents including drawings and specifications may be examined at the above offices of PRICHEC and of the Engineer. Contract Documents may be obtained at the above offices of PRICHEC and of the Engineer upon payment of twenty-five dollars ($25.00) per complete set, which payment will not be refunded.

Each bid received at Havana must be accompanied by a bid guarantee in the form of certified check or bid bond in the amount of two percent (2%) of the total bid price. Return of the bid guarantee is covered in the Information for Bidders included with the Contract Documents.

KNAPPEN-TIPPETTS-ABBETT-McCARTHY,
ENGINEERS for PRICHEC

Bids: August 24, 1955

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Daylight Saving Time, the 24th day of August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of structures and the grading, drainage and paving of the Turnpike Section 37N, part of the Northeastern Extension of the Pennsylvania Turnpike in South Abington Township, Lackawanna County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point approximately 33 lineal feet northeast of the center line of Legislative Route 953 at Turnpike Station 630+45 in South Abington Township, Lackawanna County; thence in a northeasterly direction 3,011 lin. feet to Turnpike Station 660+56, at a point approximately 3,044 lineal feet northeast of the center line of Legislative Route 953 in South Abington Township, Lackawanna County, a distance of approximately 0.57 miles.

The approximate quantities of the principal items are as follows:

Class 1 Excavation	284,115 cubic yards
Class 2 Excavation	10,382 cubic yards
Class 2A Excavation	1,105 cubic yards
Special Subgrade	75,120 square yards
Plain Concrete Base Course	10,289 square yards
Reinforced Concrete Pavement	34,074 square yards
ID-2 Bituminous Pavement	19,767 square yards
Class A Concrete	836 cubic yards
Class B Concrete	1,893 cubic yards
Plain Steel Bars	243,793 pounds
Fabricated Structural Steel	470,500 pounds
Median Divider	728 lineal feet
Cast in Place Concrete Piling	7,718 lineal feet

Copies of plans, specifications and other contract documents, including cross sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on August 2, 1955. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50) dollars per set.

Plans and contract documents for this section, exclusive of cross sections and specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania

Bids: August 22, 1955

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
CHANNEL IMPROVEMENTS
AT CHIMNEY ISLAND
NEAR OGDENSBURG, ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATION NO. PA-5-11017
ST. LAWRENCE CONTRACT NO. 23

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for Channel Improvements at Chimney Island near Ogdensburg, St. Lawrence County, New York in the following ways:

(1) If brought in person on the day of receiving bids until 10:30 A. M. Eastern Daylight Saving Time on the 22nd day of August, 1955 at 270 Broadway, Hearing Room C on the 6th floor, New York, New York.

(2) If mailed in, until 10:15 A. M. Eastern Daylight Saving Time on the 22nd day of August, 1955 at the Authority's office, 270 Broadway, Room 1300, New York 7, New York.

The proposals will be publicly opened and read aloud at the time and at the address given in (1) above.

The work consists of approximately 1,900,000 cubic yards of river channel dredging in the St. Lawrence River approximately 6 miles east of Ogdensburg, New York.

Bids will be restricted to American bidders. Dredges and other marine plant employed on the work shall be registered or built in the United States.

The work shall be completed on or before November 1, 1957.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Ten ($10.00) dollars per initial set and Five ($5.00) dollars per set for additional sets, no part of which will be refunded.

Bids must be made in duplicate in accordance with instruction contained in the Information for Bidders. Each proposal must be accompanied by a draft or certified check payable to the order of the Power Authority of the State of New York for the sum of $150,000.00.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

7/29/55

Bids: August 23, 1955

Contract BP-110.001

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
WATER BORINGS—BROOKLYN PIERS

Sealed proposals for making water borings at the Piers between Pioneer Street and the Brooklyn Bridge along the Brooklyn waterfront will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, August 23, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished, upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 4, 1955

Bids: August 23, 1955

Contract HT-170.001

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
HOLLAND TUNNEL
NEW JERSEY PLAZA
TOLL OFFICE BUILDING

Sealed proposals for the construction of a Toll Office Building at the New Jersey Plaza of the Holland Tunnel will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, August 23, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 4, 1955

SALARIED POSITIONS $5,000 — $35,000

We offer the original personal employment service (established 45 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.

R. W. BIXBY, Inc.
659 Brisbane Bldg. Buffalo 3, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Estimator, for firm doing extensive sewer, watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

Construction Foreman for firm engaged in extensive sewer, water main and treatment plant facilities. Permanent position in N. Y. State area. Only qualified applicants with broad experience. P-6595, Engineering News-Record.

Wanted: Instructor in engineering drawing and descriptive geometry. Salary $3600 for 9 month period. Dept. of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

Assistant Engineers, civil engineering background. Training and experience in one or more of the following: design of subdivisions, sewers, water mains, streets, etc. for career positions in consulting engineer's office. Salary open. State education, experience, salary requirements and give references. Lester V. Johnson Associates, 2309 Wilson Boulevard Arlington, Virginia.

Manager for a Midwest Construction Company in a City of approximately 100,000, doing municipal, industrial, highway grading and concrete work, and private work. Must be good organizer and pusher. Excellent opportunity for the right man. P-7111, Engineering News-Record.

Engineers—Experienced in design and preparation of plans for water works and sewerage systems and structural design. Advise education, experience, salary requirements and when available. Location Eastern New York. Reply P-7171, Engineering News-Record.

Architect—Qualified through training and experience to design churches, schools and other buildings. Give full information as to education, experience, salary requirements and when available. Location Eastern New York. P-7172, Engineering News-Record.

Wanted: Instructor and Half-time graduate assistants in engineering drawing and/or mechanics subjects. Opportunity to earn advanced degrees. Write: Head, Department of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania.

Wanted—Reinforcing steel detailer and estimator. Good opportunity for advancement with young fast growing fabricator. Excellent salary for right man. Write or phone 7741 collect. Brocker Mfg. & Supply Co., York, Pa.

Construction Superintendent who has specialized on the placing of concrete. For a man who is thoroughly familiar with concrete plant, concrete, and form costs, etc., we have an exceptional opportunity. Give full particulars of experience and education. P-7147, Engineering News-Record.

Instructors and Assistant Professors in surveying, engineering mechanics, and fluid mechanics, wanted by university in Southeast. Instructors with B.S. will have opportunity to work for M.S. while receiving full compensation. Salary commensurate with education and experience. Positions start September 1955. P-7146, Engineering News-Record.

Sanitary Engineer. Graduate engineer with broad and recent water works and sewerage design experience for consultant's office located in Ohio. Permanent position intended. Write fully regarding experience, age and ability to manage engineering personnel. Salary open. P-7184, Engineering News-Record.

Univ. of Colorado, Boulder, Instructor, M.S. or B.S. degree. Opportunity for graduate work. C. E. Dept.

(Continued on page 96)

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

NATIONAL COVERAGE

Positions Vacant | **Civil Service Opportunities . . .** | **Employment Agencies**
Positions Wanted | **Selling Opportunities Wanted** | **Employment Services**
Part Time Work | **Selling Opportunities Offered** | **Labor Bureaus**

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $24.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.
Subject to Agency Commission.

$1.80 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for August 18th issue closing August 8th

ARCHITECTURAL, CIVIL, MECHANICAL ENGINEERS

Interested in design and development of products and equipment for building and highway construction field—minimum of three years experience in construction or allied manufacturing field preferred. Work consists of design of products and related equipment and some laboratory and field work in conjunction with this design. Salary open—excellent working conditions.

Please submit work history and qualifications to:

Personnel Director

GRANCO STEEL PRODUCTS COMPANY
6506 North Broadway St. Louis 15, Mo.

HIGHWAYS ENGINEERS

A rapidly expanding organization devoted exclusively to highway engineering has openings at all levels for men experienced in the design of highways, freeways, expressways and associated work.
Work is in air-conditioned St. Louis office on long-term projects, with ample opportunity for professional development and advancement.
Assistance with moving expenses, excellent employee benefit and retirement plan, Blue Cross, paid vacations and holidays and sick leave.
Please send complete experience record, references, date available and salary desired in first letter.

SVERDRUP & PARCEL ENGINEERING COMPANY
1134 Locust St. St. Louis 1, Mo.

PUBLIC BUILDINGS PLANNING ENGINEER

$127.00-$158.00/wk.

Administrative & prof. engineering in direction of a long-range public buildings program. Qual: Considerable responsible exper. in the design, construction & operation of public buildings including admin. responsibility w/degree in civil engineering. Vacancy in Augusta, Maine—write to:

Maine State Department of Personnel
State House, Augusta.

Application period closes August 17, 1955.

SANITARY ENGINEER

Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Require man experienced in paper mill wastes, paper mill stream pollution and paper mill water purification. No other experience will be given consideration. Good salary and advancement. All replies confidential. Send resume of educational background and industrial experience to Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

WATER DISTRIBUTION SUP'V.

SALARY: $6192 to $6783 PER YEAR

A man with six years experience including two years at the foreman level in the installation and repair of water mains and appurtenances and high school graduation (substitution of Exp. for Education on a year for year basis) is just what we need. If you meet these requirements please contact:

PERSONNEL APPLICATION OFFICE
ROOM 127, CITY HALL
PHILADELPHIA 7, PENNA.
(Before September 12, 1955)

COMMERCIAL ENGINEER

A world-wide manufacturer of building products with headquarters in Pittsburgh is adding to its Commercial Engineering Department. The position requires an architectural or structural engineering graduate to maintain a product educational program presented to college and university undergraduates. Successful applicant must be willing to travel. Excellent opportunities for advancement plus a good salary, profit sharing, and liberal insurance and hospitalization benefits. Send a resume of education, experience, and salary expected to—

P-7054, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ARCHITECTS

Alaska-Canada Asst Chiefs

Min 54 hr wk, $305 plus overtime to 70 hrs, maint & transportation. Contract to Oct 1956, Home for Dec 1955, send full resume, transportation paid for qualified applicants.

ALFRED HOPKINS & ASSOCIATES
292 Madison Ave. New York City

Estimator Wanted

Commercial and Industrial Construction

Must be thoroughly experienced in take-off and have a good knowledge of cost analysis. Unusual opportunity to permanently associate with a firm of established contractors on a good salary and percentage basis. Graduate engineer under 45 preferred.

P-7062, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS ARCHITECTS

A leading engineering and construction company has immediate openings available in Cincinnati, Ohio and Cleveland, Ohio offices for qualified engineers, group leaders, and designers in one or more of the following categories:

ARCHITECTURAL—experienced in all phases of industrial plant design

STRUCTURAL—reinforced concrete and structural steel design

MECHANICAL—process piping and process equipment layout design

ELECTRICAL—lighting layouts, controls, and power layouts.

These positions offer opportunities for long term employment with attractive salaries, paid vacation and holidays, sick leave allowance, moving allowance, and group insurance and hospitalization program.

THE H. K. FERGUSON COMPANY
Engineers and Builders
Ferguson Building, 1783 East 11th St. Cleveland 14, Ohio

ENGINEERS — DESIGNERS

Chemical - Mechanical - Electrical - Structural - Piping

San Francisco assignment

Recent design experience on petroleum refineries, chemical plants, or related projects. Compensation commensurate with ability. Liberal moving allowances.

Please write furnishing complete chronological experience record and salary history, also full details regarding education, salary desired, businesss and character references.

BECHTEL CORPORATION
220 Bush Street San Francisco 4, Calif.

STRUCTURAL

DESIGNERS - DETAILERS - DRAFTSMEN

for work on

- Bridges
- Industrial Buildings
- Expressways
- Pressure Vessels

We desire engineers who want long term employment with ample opportunity for professional development and advancement. We have an excellent Employee Benefits Plan and sponsor a Blue Cross-Blue Shield Group. Paid vacations, holidays and sick leave. St. Louis offers extensive housing, educational and cultural facilities.

Please write fully to

SVERDRUP & PARCEL, INC.
Consulting Engineers
915 Olive St. Louis 1, Mo.

EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to
Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

ASPHALT PLANT EXPERT

for Sales and Service Work

Large manufacturer of asphalt plants requires man for sales and service work on East coast. Man must be well experienced with asphalt plants from both the sales and technical angle. Salary commensurate with ability.

P-7176, Engineering News-Record
1111 Wilshire Blvd., Los Angeles, Calif.

ESTIMATOR
FOR HEAVY CONSTRUCTION

Northeastern Ohio Firm Desires Individual with Extensive Estimating Experience in Road Excavation, Concrete Paving, Bridge, Airport, and Dam Construction. Ability to Coordinate Subcontractors Is Essential. In Reply State Salary Desired.

P-7224, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

THE DOW CHEMICAL COMPANY

TEXAS DIVISION
FREEPORT, TEXAS

Offers Opportunities for:

ORGANIC CHEMISTS
ANALYTICAL CHEMISTS
POLYMER CHEMISTS
PHYSICAL CHEMISTS
CHEMICAL ENGINEERS
MECHANICAL ENGINEERS

with

B.S., M.S., Ph.D. Degrees
0 to 5 Years Experience

Positions available for qualified candidates in Organic and Inorganic Research, Development, Organic and Inorganic Production, Process and Plant Design, and Analysis.

Moving Expenses Paid
Good Housing Conditions

Qualified applicants please submit resume and record of college work to:

D. M. DUGUID
The Dow Chemical Company
Freeport, Texas

MECHANICAL ENGINEER

Graduate Mechanical Engineer experienced in the operation of Fourdrinier paper machines, refining and related equipment for large expanding and progressive mill in Middle Atlantic States. Under 35 years of age. Good salary and excellent opportunity for advancement. Give detailed resume of experience. Send resume to
Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

CHALLENGING POSITION

Expanding prestressed concrete operation needs capable Designer-Engineer. Must be able to show results. Resume in first reply.

P-6954, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

DESIGN ENGINEERS

Permanent opportunities for qualified engineers at the Cleveland, Ohio office of an engineering firm having over 50 years of successful operation doing business all over the world. Experience in design of:

STRUCTURAL STEEL
REINFORCED CONCRETE
HEAVY MACHINES
PIPING
PROCESS HEATERS

Applicable to design of blast furnaces, ore beneficiation plants, oil refineries, petro-chemical plants and similar heavy structures.

TOP COMPENSATION COMMENSURATE WITH EXPERIENCE AND ABILITY

PENSION PLAN
MANY OTHER BENEFITS
NO AGE LIMITATION

Please Contact or Write:

Edward A. Kolner
ARTHUR G. McKEE & CO.
2300 Chester Ave. Cleveland 1, Ohio

Sales Engineers

A major steel company has need for sales engineers in its rapidly expanding prefabricated steel building division. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan. Openings in Baltimore, Philadelphia and Pittsburgh.

P-6903, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

HEATING & VENTILATING ENGINEER

Graduate Engineer experienced in all phases of paper mill heating and ventilating air conditioning and refrigeration for large expanding and progressive mill in Maryland. Under 35 years of age, good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

CONCRETE INSPECTORS

TOP SALARY & EXPENSES!

Northern Part
NEW YORK STATE

FIELD INSPECTOR
MUST BE CIVIL ENGINEER
AND FAMILIAR WITH
THIN SHELL CONSTRUCTION.

PLANT INSPECTOR
MUST HAVE EXPERIENCE
IN CONCRETE MIX
DESIGN & CONTROL.

Write fully—confidential—
state salary desired—to:

P-7197, Engineering News-Record
330 W. 42 St. New York 36, N. Y.

WHO...ME?

AN *AIRCRAFT* ENGINEER?

TURBO-PROP SUPER CONSTELLATION
—world's fastest propeller-driven transport, one of 10 Lockheed aircraft in commercial and military fields. Development projects are even more extensive.

Yes, Lockheed in California can train you...at full pay!

The step up to Aircraft Engineering isn't as steep as you might expect.

Aircraft experience isn't necessary. Lockheed takes your knowledge of engineering principles, your experience in other engineering fields, your aptitude and trains you for aircraft work through a program adapted to the individual.

Part of the program includes on-the-job training. When necessary you attend Lockheed classes. You learn to work with closer tolerances. You become more weight conscious. Because Lockheed's diversified expansion program ranges across the entire spectrum of aeronautical endeavor, you learn that fresh thinking, new ideas are welcomed and rewarded.

Naturally, you receive full pay while training, as well as a wide range of extra employee benefits which add approximately 14% to your salary in the form of insurance, retirement pension, etc.

These opportunities for engineers in all fields have been created by Lockheed's long-range development program. Projects include: turbo-jet and turbo-prop transports; supersonic fighters far exceeding present-day aircraft in performance; advanced versions of vertical rising aircraft, jet trainers and bombers; nuclear energy applications to aircraft; and a large number of significant classified projects.

From a career standpoint, it is significant that a large measure of Lockheed's development program involves commercial aircraft.

Equally important from a living standpoint is the better life you lead in Southern California. Year-round sunshine, varied cultural and recreational opportunities, and scenic beauty of San Fernando valley provide the ideal background for modern living.

You are invited to write for a brochure describing life and work at Lockheed and a job application blank. Coupon below is for your convenience.

Mr. E. W. Des Lauriers, Dept. T-23-8
Lockheed Aircraft Corporation
1708 Empire Avenue
Burbank, California

LOCKHEED
Aircraft Corporation
BURBANK, CALIFORNIA

Dear Sir: Please send me your brochure describing life and work at Lockheed in Southern California

My name _____

My present field of engineering _____

My street address _____

My city and state _____

EMPLOYMENT OPPORTUNITIES

POSITIONS VACANT
(Continued from page 93)

Construction Superintendent—Immediate employment. Must be capable of taking complete field charge of $3,000,000 school project. State experience and references. Location—North Eastern Ohio. Salary open. P-7198, Engineering News-Record.

Mechanical Engineer—Draftsman, position open for experienced man with ability in heating and air-conditioning design. Also position as mechanical draftsman in above skills open. Call J. A. Fuller, Director of Employment, Colonial Williamsburg, Williamsburg, Virginia, Phone 330.

Civil Engineers—By established public utility supervisory—consulting organization—Junior—2-3 years experience, preferably in field on construction and/or surveying for work in connection design and operation hydro systems, also structural, foundations for steam and Diesel plants. Assistant—age 30-45 years, minimum 5 years experience structural steel, reinforced concrete and foundation design of steam electric power plants. Location New York. Some travel field future. Reply stating age, education, experience, personal particulars, minimum salary expected. P-7206, Engineering News-Record.

Cost Analyst for engineering dept. planning group. Graduate Engineer—construction cost & engineering background. Analytical min, personality, initiative, are important. Location: Southwest Ohio. P-7229, Engineering News-Record.

Civil Engineer—qualified to design and to prepare specifications and cost estimate for earth dams and appurtenances. Location, Ohio. P-7230, Engineering News-Record.

Sales Manager for manufacturer of concrete form accessories. Must be experienced in construction practices, read prints. Qualified to organize and supervise sales for national coverage. Give full details including salary expected in first letter. Opportunity of lifetime for right man. P-7236, Engineering News-Record.

Licensed engineer or land surveyor. A good opportunity for right party. Box 321, Red Bank, New Jersey.

Wanted—First-class structural and plate draftsman. Very desirable living conditions, southern city. Give full information as to experience and expected remuneration in reply. P-7231, Engineering News-Record.

Engineer-Superintendent for blacktop paving on roads, airports, etc. Must be graduate engineer between 30-40 years old who has been actively engaged in actually doing this type of work at least the last five years in this capacity. This is a permanent position with a substantial company in New York State. This opening has a real future for the right man. Salary open. P-7107, Engineering News-Record.

Structural and Hydraulic design engineer to design and estimate dams, spillways, outlets, pipe lines, hydro., etc. Experienced college graduate. Eligible or registered P.E. Location Texas. P-7249, Engineering News-Record.

Engineer with executive ability and estimating and field experience in pile driving to manage foundation construction operations. Permanent position Pennsylvania location. Write stating qualifications and salary. Replies confidential. P-7247, Engineering News-Record.

POSITIONS WANTED

Heavy Construction Manager. Thoroughly qualified in field, and office 26 years experience hydro, and steam plants, dams, tunnels and airbases. Construction wide, and cost-conscious now employed. Have had foreign experience. PW-7126, Engineering News-Record.

Construction Estimator — specifications writer, 20 years experience heavy industrial, institutional and military. Successfully completed three foreign contracts South America and South Pacific. Interested in foreign assignment. Sober, reliable age 40. PW-7155, Engineering News-Record.

GENERAL MANAGER—CONSTRUCTION

Graduate civil engineer; M. ASCE; 51; twenty years continuous employment with and rose to be vice-president of heavy engineering construction company. Qualified in all phases of field and office work including estimating, contract negotiation and job management. Licensed prof. engineer.

PW-7244, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

Contractor's Chief Estimator—30 years top flight competitive experience. Assume full responsibility for bid preparation and usual chief engineer functions. Open for attractive proposition requiring thoroughly qualified man. PW-7115, Engineering News-Record.

Construction Engineer—50 B.S. 9 years recent supervision of field construction on Atomic, steam power, industrial and chemical plants. 5 years highways, bridges and miscellaneous buildings. 5 years office and design. 1 year recent design of chemical and industrial piping. Good references on all jobs. PW-7248, Engineering News-Record.

Civil, sanitary engineer, 38, registered. 15 years experience. Now employed in responsible position. Desires to become associated with small engineering firm in Midwest on profit sharing basis. PW-7237, Engineering News-Record.

Purchasing Agent: traffic, expediting, field office mgr., contract-negotatn, renegotatn & admnstrn, controls, costs, A-E liaison; nations top contrs. 20 yrs. private competitive & 10 yrs. FF Gov't wk. AEC Ptsmth, Paducah & Ridge Q cleared. Prefer ntheast. PW-7235, Engineering News-Record.

POSITIONS WANTED

Estimator—heavy const.—cost experience in concrete excavation, bridges, piers, drainage, sewers, waterlines, and highways. Complete takeoffs, pricing & sub pricing of bid. Ten years exper. CE grad. P.E.; N.Y.C. vicinity. PW-7232, Engineering News-Record.

Project Manager—on $1,000,000 to $5,000,-000 jobs. Proven managerial ability on highways, bridges, sewers, waterlines, piles, docks & railroads. PE 34 N.Y.C. vicinity. PW-7233, Engineering News-Record.

Metallurgical plant draftsman. Long experience and technical education. Mine, mill and smelter designer, power plants, head frames, struct'l-mech'l. Rigid frames, Arches, all bridges. PW-7192, Engineering News-Record.

Civil Engineer, 15 years field experience, industrial and commercial buildings desires position in office of general contractor, estimating, purchasing, etc. midwest location. PW-7199, Engineering News-Record.

Administrative Engineer—25 yrs. in heavy constr. seeks challenging assignment any location as proj. engr., mgr. or supt. Sober, ambitious, proven ability, excellent references. Reg. P.E. accustomed to long hrs., str. salary and bonus. Available now. PW-7238, Engineering News-Record.

SEARCHLIGHT SECTION

(Classified Advertising)

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED* ——RATES—— *DISPLAYED

$1.80 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
PROPOSALS, $1.80 a line an insertion.
BOX NUMBERS count as one line additional in undisplayed ads.
DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.
EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for August 18th issue closing August 8th

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

BUSINESS OPPORTUNITY

Established Penna contractor wants co-contractor or capitalist for production of Limestone in a non-competitive Penns. territory where the return on the investment will run $300,000 annually. BO-7149, Engineering News-Record.

SPECIAL SERVICE

Gulf Coast Group of engineers and draftsmen available to do design and drafting on contract basis. Licensed and experienced in civil, structural, plant layout, mechanical (piping, vessels), and electrical. Attractive proposition for over-loaded engineering firm or fabricator. SS-7201, Engineering News-Record.

WANTED

ANYTHING within reason that is wanted in the field served by Engineering News-Record, can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

WANTED
Universal Concrete Forms
5—10,000 Sq. Ft.
State conditions, prices and location.
BOX 709
MAYSVILLE, KY.

FOR SALE
STEEL BARGES - DREDGES
TUGS - WORK BOATS - LIGHTERS
For every Purpose
H. J. BRANIGAN & COMPANY
75 West Street, New York 6, N. Y.
Telephone: WHitehall 3-6240

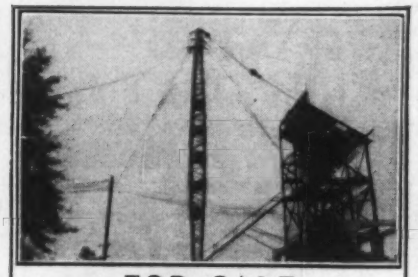
ESTIMATORS thousands of them use Pocket-Size 150 tables proven labor hours, material quantities for rapid unit-cost calculation. "BUILDING LABOR CALCULATOR" postpaid $10.00 with order. Thirty sixth year. Ten days free trial money back guarantee. TAMBLYN SYSTEM, 1420 Gilpin Street, Denver 18, Colorado.

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
P.O. Box 921 Lake Worth, Florida

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty third year.
WILSON *Engineering Corp*
College House Offices HARVARD SQ CAMBRIDGE MASS

SHOVEL
UNIT Model 1020A Heavy Duty ¾ Yd.
G.M. Diesel Engine Guaranteed 85% new
PRICE $14,500.00
ANDERSON EQUIPMENT CO.
Box 1737, Pittsburgh 30, Penna.
Phone: LEhigh 1-6020

GREENHEART
"NAUTILUS" launched on Greenheart ways — Strongest of all structural timbers
GREENHEART (Demerara) Inc.
52 Vanderbilt Ave. New York. *MU-6-0410*



FOR SALE
2-Yard Sauerman
SLACKLINE CABLEWAY

With 100 Ft. Steel Tower in good working shape, with Westinghouse Motor, Type C-1 or C-11, Induction Motor, 125 H.P., 3 Phase, 60 Cycle, 550 Voltage, 690 RPM under load with starter forward and reversible. We will sell this equipment for the highest offer received by September 1, 1955.

Contact

Richard H. Pennell

Pennell & Harley,
Incorporated
Spartanburg, South Carolina

The following equipment has been declared surplus and is available for immediate sale:

2 16" MC Fig. 6977 Single Impeller "A" Turbine Pumps Cp. w/65' Setting of 12" x 1-7/16" Column & Shaft w/20 x 12 Surface Discharge Heads Less Prelube Tank & Fittings w/12" Basket Strainers, w/60 H.P. 1750 RPM 3 Phase 60 Cycle, 440 Volts V.H.S. Motors w/N.R.R. complete with Magnetic Reduced Voltage Controls for 440 Volts.
Located—*Durham Storage.*

1 24" MC Fig. 6977 Single Stage Impeller "A" Turbine Pump w/65' Setting 16" x 2-3/16" Column & Shaft w/20 x 12 Surface Discharge Head Less Prelube Tank & Fittings w/16" Basket Strainer w/150 H.P. 1160 RPM 3 Phase 60 Cycle 440 Volts VHS Motor w/NRP w/1 Magnetic Reduced Voltage starter for 150 H.P. 3 Phase 60 Cycle 440 Volt Motor.
Located—*Durham Storage.*

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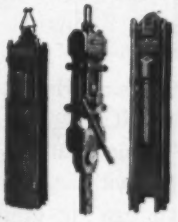

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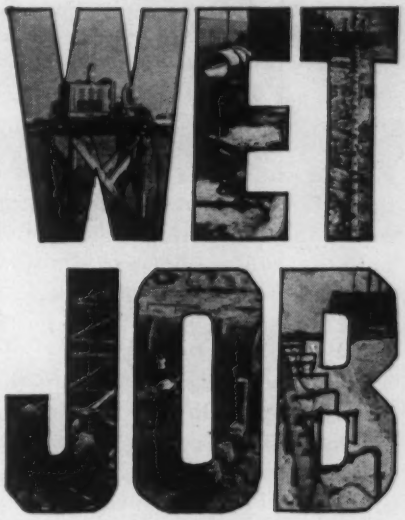

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EDITORIALS

A Dismal Failure

REFUSAL TO PASS A ROAD BILL to meet the nation's needs places Congress in the position of chalking up one of the most dismal failures of any legislative body in history either at home or abroad. Faced with a clear cut emergency, and admitting it, Congress nevertheless chose to gamble with both the nation's economic growth and its future defense. And it chose this dead end road because it lacked both the wisdom and the courage to do otherwise. Republicans and Democrats share the blame equally. Both played selfish politics and both bowed to lobbyist pressure.

Blocking President Eisenhower's bond financing plan almost immediately after it was proposed, and without any attempt to alter it or combine it with other revenue raising plans, was the original show of lack of wisdom, because it was a workable plan and because the alternative was a pay-as-you-go plan requiring a heavy dose of user taxes. There was also no evidence of wisdom in then telling the states to find the money as the Gore Bill did, and it was not particularly bright to load such a major share of the burden on the trucking industry as did the Fallon Bill.

Sensing it would not have the courage to pass the Fallon Bill in the face of the lobbying pressure that was sure to build up. Congress also lacked the courage to work out a substitute that would put the necessary user taxes on a broader base, or to reverse its stand on the President's proposal. It merely voted both of the measures down in an unparalleled disregard for the national welfare. It did not even, so far as the record indicates, give any thought to requiring that the federal government devote all of its present gasoline and motor vehicle excise tax revenues to roads.

If the negative attitude toward an adequate road building program, as expressed by Congress in its action last week, was in line with the attitude of the people at large, there would be real cause to fear for the future of our growing and prosperous economy. For there is no single factor that can damage the economy more quickly and effectively in this stage of its growth than continued inadequacy in the facilities for highway transport. But the fact of the matter is that there is a real and widespread demand for greatly improved road systems, and Congress badly misread the signs or brazenly ignored them.

The public, time and again, has shown that it not only wants better roads just because it want to be able to drive more easily and safely, but that it appreciates the economic relationship of a big road building program to its prosperity and rising living standards.

The need for an adequate roadbuilding program increases even while Congress procrastinates. And since it is an issue that cannot be swept under the rug and forgotten, Congress must still face the day of decision. If it is to be user taxes on a pay-as-you-go basis Congress will have to summon the courage to impose them. If such courage is lacking—or perhaps if Congress is merely wise—it will go back to the President's bond program or some reasonable variation of it.

Either alternative offers Congress the chance to erase the stigma of dismal failure that it carries for shirking its responsibility to enact the kind of a road bill that the nation sorely needs and had every right to expect.

Certification of Specialists

BY ACTION OF ITS BOARD OF DIRECTION in St. Louis in June, the American Society of Civil Engineers has entered a new area of service to its members—certification of the qualifications of individuals within a specialist group. It begins with ASCE's agreement to support an American Sanitary Engineering Intersociety Board, whose functions will be to certify qualified applicants who desire this special recognition as a means of enhancing their professional status.

Need for such certification has been voiced largely by engineers in public health, seeking improved stature relative to medical professionals with whom they must work. And it was a joint committee of sanitary engineering groups under Michigan's Professor Earnest Boyce that developed and proposed the plan to the ASCE.

There is no certainty that other specialized groups of civil engineers within ASCE will desire such certification as this, now or in the near future. But all segments of the society will watch with interest to see how the sanitary engineers' plan can be implemented in the face of numerous complexities (ENR Aug 13, 1955, p. 120).

Should the plan be successful, however, some of these other groups might see advantage in similar certification. And should the certification idea grow it would inevitably raise questions as to the adequacy of the society's present system of grading members on general experience. There are those now who maintain that the professional engineer's license and its in-training phase have largely supplanted the need for this general grading, so perhaps the societies could better devote their time to certifying as to extent and degree of specialization, something the majority of P. E. licenses do not do.

But these considerations await the outcome of the sanitary engineers' certification scheme. For the present ASCE's first venture into certification is merely an example of a society's alertness to its responsibility of extending its services to its members in response to their needs and wishes. It is a venture worth watching.

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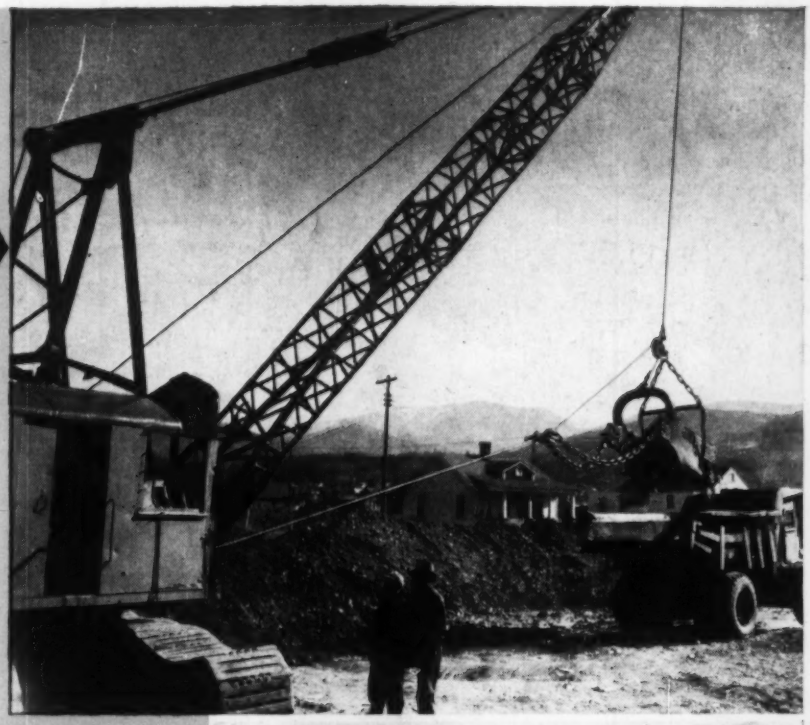

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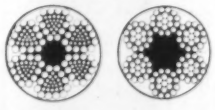

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